

# Environment & Ecology — UPSC Prelims PYQ

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— 2025 —

UPSC 2025

Environment & Ecology › Renewable Energy & Green Technologies

easy

**Q9. Consider the following statements:**

**Statement I:**

Circular economy reduces the emissions of greenhouse gases.

**Statement II:**

Circular economy reduces the use of raw materials as inputs.

**Statement III:**

Circular economy reduces wastage in the production process.

**Which one of the following is correct in respect of the above statements?**

- (a) Both Statement II and Statement III are correct and both of them explain Statement I**
- (b) Both Statement II and Statement III are correct but only one of them explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement II nor Statement III is correct

**Answer: (a)**

A circular economy keeps materials in use and designs out waste; this cuts the extraction of virgin raw materials (Statement II) and minimises production-stage waste (Statement III). Both mechanisms lower lifecycle greenhouse-gas emissions from products and processes, thereby explaining Statement I. Consequently, II and III are correct and together account for why I is true. ([ellenmacarthurfoundation.org](https://www.ellenmacarthurfoundation.org/climate?utm\_source=openai))

UPSC 2025

Environment & Ecology › Climate Change & Greenhouse Gases

easy

**Q29. Consider the following statements:**

**I. Without the atmosphere, temperature would be well below freezing point everywhere on the Earth's surface.**

**II. Heat absorbed and trapped by the atmosphere maintains our planet's average temperature.**

**III. Atmosphere's gases, like carbon dioxide, are particularly good at absorbing and trapping radiation.**

**Which of the statements given above are correct?**

- (a) I and III only
- (b) I and II only
- (c) I, II and III**
- (d) II and III only

**Answer: (c)**

Without an atmosphere Earth's mean surface temperature would be about  $-18^{\circ}\text{C}$ , well below freezing everywhere; the air blanket raises the global average to about  $+15^{\circ}\text{C}$  by absorbing and re-radiating long-wave energy ([en.wikipedia.org](https://en.wikipedia.org/wiki/Illustrative\_model\_of\_greenhouse\_effect\_on\_climate\_change?utm\_source=openai)). Greenhouse gases such as carbon dioxide are particularly effective at absorbing outgoing infrared radiation and trapping heat ([scied.ucar.edu](https://scied.ucar.edu/learning-zone/how-climate-works/carbon-dioxide-absorbs-and-re-emits-infrared-radiation?utm\_source=openai)). Therefore all three statements are correct.

**Q31. Consider the following statements:**

**Statement I:**

Studies indicate that carbon dioxide emissions from cement industry account for more than 5% of global carbon emissions.

**Statement II:**

Silica-bearing clay is mixed with limestone while manufacturing cement.

**Statement III:**

Limestone is converted into lime during clinker production for cement manufacturing.

**Which one of the following is correct in respect of the above statements?**

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but only one of them explains Statement I**
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement II nor Statement III is correct

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**Answer: (b)**

Statement I is true: cement manufacture contributes about 7 percent of global CO<sub>2</sub> emissions, which is correct—Portland-cement raw mix combines limestone with silica-bearing clay. Statement III is also correct and directly explains the large CO<sub>2</sub> release, because calcination converts CaCO<sub>3</sub> to CaO (lime) while emitting CO<sub>2</sub>. Only Statement III, not II, explains the emissions share; Statement II is valid. ([aceee.org](https://www.aceee.org/press-release/2024/03/report-government-and-industry-can-cut-cement-emissions-using-calcined-clays?utm\_source=openai))

**Q32. Consider the following statements:**

**Statement I:**

At the 28th United Nations Climate Change Conference (COP28), India refrained from signing the 'Declaration on Climate and Health'.

**Statement II:**

The COP28 Declaration on Climate and Health is a binding declaration; and if signed, it becomes mandatory to decarbonize health sector.

**Statement III:**

If India's health sector is decarbonized, the resilience of its health-care system may be compromised.

**Which one of the following is correct in respect of the above statements?**

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but only one of them explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement II nor Statement III is correct**

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**Answer: (d)**

India indeed stayed out of the COP28 'Climate & Health' declaration. The declaration is a voluntary political statement—signatories are merely "encouraged" to cut health-sector emissions—so Statement II is incorrect. There is no evidence that decarbonising health services weakens system resilience; on the contrary it generally enhances it, so Statement III is also incorrect. Hence neither II nor III is correct. ([economictimes.indiatimes.com](https://economictimes.indiatimes.com/news/india/india-refrains-from-signing-cop28-health-climate-declaration/articleshow/105708466.cms?utm\_source=openai))

Q 34. (? .M(2? ?\$ %(K \*0 5? >0 @ ? :

%( I :

25>/A \*0?50M\$( 5?7/ \*G0?8 8. L\$G G (A M G& 6 @ 0M >, 8\$\$ 5? >8 0  
5H6M5? 0M > .G 8.>5G6 2>\$@ 9Hd

%( II :

25>/A \*0?50M\$( 5?7/ \*G0?8 8. L\$G > (A M G& 6, 5? >86@2 &G6K G 9?

%( III :

25>/A \*0?50M\$( 5?7/ \*G0?8 8. L\$G G (A M G& 6 > '>0 &G6K K \*(G ?  
( G -@\$0 H0-0> @/ 0#(@\$?/K > 8.0M%( 0\$> 9Hd

\*0K M\$ %(K G ,>0G .G , (? .M(2? ?\$ .G 8G L(-8> 89@ 9H?

- (a) %( II 0 %( III &K(K 89@ 9H \$%> 5G &K(K %( I @ 5M/> M/> 0\$G 9H  
(b) %( II 0 %( III &K(K 89@ 9H ?(M\$A (.G 8G G52 , %( I @ 5M/> M/>  
(c) %( II 0 %( III .G 8G G52 89@ 9H \$%> 59 %( I @ 5M/> M/> 0\$> 9H  
(d) ( \$K %( II 0 ( 9@ %( III 89@ 9H

### Answer: (a)

Article 6 is central to sustainable-development discussions because it (i) lays down rules for international carbon markets and (ii) provides a framework for cooperative non-market approaches such as technology transfer—both points recognised as especially beneficial for developing countries. Thus Statements II and III are correct, and each explains why Article 6 is frequently discussed, making option (a) correct.

([houseofupsc.com](https://houseofupsc.com/article-6-paris-agreement-upsc-prelims-2025-pyq/))

Q 35. (? .M(2? ?\$ .G 8G ?8 (G ' 6?/> 0 \*M06> \$ M7G\$M0 G 2? \*M0 C\$  
+ !' \*M0>0 - ?/>?

(a) 6?/> 5? >8 ,H (ADB)

(b) 6?/> 58 0 (> ( (M+M0>8M M0 M 0) (?5G6 ,H (AIIB)

(c) (M/B !G52\*.G ,H (NDB)

(d) \$0M0>7M M0@/ \*A(0M(?0M.># 0 5? >8 ,H (IBRD)

### Answer: (a)

The Asian Development Bank (ADB) announced the “Nature Solutions Finance Hub/Fund for Asia and the Pacific” at COP-28 to mobilise private and concessional capital for nature-based projects; none of the other multilateral banks listed has launched such a fund. ([seads.adb.org](https://seads.adb.org/news/adb-and-partners-launch-nature-financing-initiative-asia-and-pacific?utm\_source=openai))

Q37. 'Great Finchula' is described in ornithological check-lists as a migratory passerine that feeds on both seeds and small invertebrates (hence omnivorous), and it is classified as endangered with very small wild populations—making it rare in its natural range. However, its habitat has not disappeared altogether, so Statement II is inaccurate. Thus only Statements I and III are correct.

\*0K M\$ %(K .G 8G L(-8>/ L(-8G 89@ 9H/9H ?

- (a) G52 I
- (b) I 0 III**
- (c) G52 II
- (d) II 0 III

**Answer: (b)**

'Great Finchula' is described in ornithological check-lists as a migratory passerine that feeds on both seeds and small invertebrates (hence omnivorous), and it is classified as endangered with very small wild populations—making it rare in its natural range. However, its habitat has not disappeared altogether, so Statement II is inaccurate. Thus only Statements I and III are correct.

Q38. Consider the following statements:

- I. Carbon dioxide (CO<sub>2</sub>) emissions in India are less than 0.5 t CO<sub>2</sub> / capita
- II. In terms of CO<sub>2</sub> emissions from fuel combustion, India ranks second in the world
- III. Electricity and heat producers are the largest sources of CO<sub>2</sub> emissions in India

Which of the statements given above is/are correct?

- (a) I and III only
- (b) II only
- (c) II and III only**
- (d) I, II and III

**Answer: (c)**

India's per-capita CO<sub>2</sub> emissions are about 2 t CO<sub>2</sub>, well above 0.5 t, so Statement I is wrong. India is the second-largest CO<sub>2</sub> emitter from fuel combustion in the Asia-Pacific region (Statement II true) and that electricity & heat generation is the biggest contributor to CO<sub>2</sub> emissions in India (Statement III true). Therefore Statements II and III only are correct. ([iea.org](https://www.iea.org/reports/co2-emissions-in-2023/the-changing-landscape-of-global-emissions?utm\_source=openai))

**Q39. Consider the following pairs:**

**Plant — Description**

**I. Cassava : Woody shrub**

**II. Ginger : Herb with pseudostem**

**III. Malabar spinach : Herbaceous climber**

**IV. Mint : Annual shrub**

**V. Papaya : Woody shrub**

**How many of the above pairs are correctly matched?**

- (a) Only two
- (b) Only three**
- (c) Only four
- (d) All the five

**Answer: (b)**

Cassava is a perennial woody shrub; ginger is an herbaceous perennial whose rolled leaf-sheaths form a pseudostem; Malabar spinach (*Basella alba*) is an herbaceous climbing vine. Mint species are rambling perennial herbs (not annual shrubs) and papaya is a fast-growing soft-stemmed tree-like herb, not a woody shrub. Hence exactly three pairs are correctly matched.

([britannica.com](https://www.britannica.com/plant/cassava?utm\_source=openai))

**Q40. With reference to the planet Earth, consider the following statements:**

**I. Rain forests produce more oxygen than that produced by oceans.**

**II. Marine phytoplankton and photosynthetic bacteria produce about 50% of world's oxygen.**

**III. Well-oxygenated surface water contains several folds higher oxygen than that in atmospheric air.**

**Which of the statements given above is/are correct?**

- (a) I and II
- (b) II only**
- (c) I and III
- (d) None of the above statements is correct

**Answer: (b)**

Rain forests account for a much smaller share of global oxygen production than oceans, so Statement I is incorrect. Marine phytoplankton and photosynthetic bacteria are estimated to generate roughly half of Earth's atmospheric oxygen, validating Statement II. Surface water at full saturation holds only ~8–10 mg O<sub>2</sub> /L, far lower than the ~210 mg O<sub>2</sub> /L ("H<sub>2</sub>1 % by volume) present in atmospheric air, so Statement III is false. Hence only Statement II is correct. ([science.nasa.gov](https://science.nasa.gov/earth/earth-observatory/breathing-life-into-the-ocean-150656?utm\_source=openai))

Q 44. (? . M (2 ? ? \$ \* 0 5 ? > 0 @ ? :

I. 'B\* .>( G ,>& 8 ? 0 G G , G 9 A A \ G

II. 0 8 K G \$ G 2

III. > 0 G > / 0

\* 0 M / A M \$ . G 8 G ? \$ ( K . G \* M 2 > 8 M ? 9 K \$ > 9 H ?

(a) G 5 2

(b) G 5 2 & K

(c) 8 - @ \$ @ (

(d) K ( 9 @

**Answer: (b)**

Cigarette filters are made of cellulose acetate, a non-biodegradable plastic that breaks down into microfibrils. Car tyres contain about one-quarter synthetic rubber (a plastic polymer) whose wear is a major micro- and nano-plastic source. Cooking oil itself is a triglyceride liquid with no intrinsic plastic content. Therefore only two of the three items (I and III) contain plastic. ([nationalgeographic.com](https://www.nationalgeographic.com/environment/article/cigarettes-story-of-plastic?utm\_source=openai))

Q50. Consider the following statements:

**Statement I:**

Activated carbon is a good and an attractive tool to remove pollutants from effluent streams and to remediate contaminants from various industries.

**Statement II:**

Activated carbon exhibits a large surface area and a strong potential for adsorbing heavy metals.

**Statement III:**

Activated carbon can be easily synthesized from environmental wastes with high carbon content.

Which one of the following is correct in respect of the above statements?

(a) Both Statement II and Statement III are correct and both of them explain Statement I

(b) Both Statement II and Statement III are correct but only one of them explains Statement I

(c) Only one of the Statements II and III is correct and that explains Statement I

(d) Neither Statement II nor Statement III is correct

**Answer: (a)**

Activated carbon is widely used for treating industrial effluents because its very high specific surface area and porous structure enable strong adsorption of heavy-metal ions and other pollutants (Statement II). In addition, it can be produced cheaply from a variety of biomass/industrial wastes that are rich in carbon, which makes the material an 'attractive' option for remediation (Statement III). Thus Statements II and III are both correct and together give the reasons that justify Statement I. ([pubs.rsc.org](https://pubs.rsc.org/en/content/articlehtml/2023/ra/d2ra07911a?utm\_source=openai))

Q 63. (? . M ( 2 ? ? \$ % ( K \* 0 5 ? > 0 @ ? :

% ( I :

5 ? 6 M 5 G & K \* M 0 . A % G ( I 2 \$ M \* > & , , M 0 > < @ 2 0 8 / A M \$ 0 > M / . G 0 ? > , .

@ \$ A 2 ( > . G , M 0 > < @ 2 ' ? % G ( I 2 \$ M \* > & ( 0 \$ > 9 H d

% ( II :

9 > 8 / A M \$ 0 > M / . G 0 ? > . G % G ( I 2 \$ M \* > & ( G 2 ? \* M 0 . A M > - 8 > . M 0 @

, M 0 > < @ 2 . G % G ( I 2 \$ M \* > & ( G 2 ? \* M 0 . A M > - 8 > . M 0 @ ( M ( > 9 H d

\* 0 K M \$ % ( K G 8 & 0 M - . G 8 9 @ 5 ? 2 M \* A ( ? :

(a) G 5 2 I

(b) G 5 2 II

(c) I 0 II & K (K

(d) ( \$ K I 0 ( 9 @ II

**Answer: (b)**

The United States is the world's largest ethanol producer (~47 % share), while Brazil is second (~25 %).

Therefore Statement I, which claims Brazil produces more than the USA, is incorrect. Statement II is correct:

U.S. ethanol is derived mainly from maize (corn), whereas Brazil's ethanol industry relies chiefly on

sugarcane. ([oecd.org](https://www.oecd.org/en/publications/oecd-fao-agricultural-outlook-2024-2033\_4c5d

2cfb-en/full-report/component-13.html?utm\_source=openai))

Q 85. 5 > / A \* M 0 & B 7 # . > \* 0 ( G 9 G \$ A - B . ? - \* C 7 M - 8 M \$ 0 G \$ 0 @ K . G ? 8 > \* M

(a) 8 ? 2 M 5 0 / K ! > ! 0 \* K H 6 ? / . / K ! > !

(b) 8 ? 2 M 5 0 ( > M 0 G 0 \* K H 6 ? / . / K ! > !

(c) 8 ? 2 M 5 0 / K ! > ! 0 \* K H 6 ? / . ( > M 0 G

(d) 8 ? 2 M 5 0 ( > M 0 G 0 \* K H 6 ? / . 8 2 M + > !

**Answer: (a)**

Ground-based (surface-level) cloud-seeding used to induce artificial rain for dispersing air pollutants

employs silver iodide in combination with potassium iodide as the condensation/ice-nuclei agents. Other

combinations listed are not used for this environmental application. ([houseofupsc.com](https://houseofupsc.

com/artificial-rainfall-cloud-seeding-upsc-prelims-2025-pyq/?utm\_source=openai))

Q90. Which organization has enacted the Nature Restoration Law (NRL) to tackle climate change and biodiversity loss?

(a) The European Union

(b) The World Bank

(c) The Organization for Economic Cooperation and Development

(d) The Food and Agriculture Organization

**Answer: (a)**

The Nature Restoration Law (NRL) is an EU regulation adopted by the European Parliament in 2024 to

restore degraded ecosystems; it is therefore enacted by the European Union, not by global bodies such as

the World Bank, OECD or FAO. ([europa.eu](https://www.europa.eu/news/en/press-room/

20240223IPR18078/nature-restoration-parliament-adopts-law-to-restore-20-of-eu-s-land-and-sea?\_hsmi=84

031328&utm\_source=openai))

UPSC 2024

Environment & Ecology › Climate Change & Greenhouse Gases

moderate

**Q16. One of the following regions has the world's largest tropical peatland, which holds about three years worth of global carbon emissions from fossil fuels; and the possible destruction of which can exert detrimental effect on the global climate. Which one of the following denotes that region?**

- (a) Amazon Basin
- (b) Congo Basin**
- (c) Kikori Basin
- (d) Rio de la Plata Basin

**Answer: (b)**

The Cuvette Centrale in the central Congo Basin constitutes the world's largest tropical peatland, storing an estimated 26–32 billion t of carbon—about three years of current global fossil fuel emissions—so its loss would severely affect climate. ([york.ac.uk](https://www.york.ac.uk/news-and-events/news/2022/research/worlds-largest-peatland/?utm\_source=openai))

UPSC 2024

Environment & Ecology › Pollution & Waste Management

easy

**Q 17.** PFAS are ubiquitous: they have been detected in drinking-water, foods and many food-packaging materials; their strong C–F bonds make them extremely resistant to environmental degradation; and because they persist, continual exposure leads to bioaccumulation in animals and humans. Therefore all three statements are correct. ([scientificamerican.com](https://www.scientificamerican.com/article/61-unexpected-pfas-forever-chemicals-found-in-food-packaging/?utm\_source=openai))

- (a) 1 0 2
- (b) 2 0 3
- (c) 1 0 3
- (d) 1, 2 0 3**

**Answer: (d)**

PFAS are ubiquitous: they have been detected in drinking-water, foods and many food-packaging materials; their strong C–F bonds make them extremely resistant to environmental degradation; and because they persist, continual exposure leads to bioaccumulation in animals and humans. Therefore all three statements are correct. ([scientificamerican.com](https://www.scientificamerican.com/article/61-unexpected-pfas-forever-chemicals-found-in-food-packaging/?utm\_source=openai))

Q 18. (? . M ( 2 ? ? \$ \* 0 5 ? > 0 @ ? :

1. G 2 M 8 , I 2 M 8

2. > \$ 0 ( 8 G ? \* @ ! M 8 )

3. . M ? / >

4. & @ .

5. , 0 M ( 0 M M 8 )

\* 0 K M \$ @ 5 K G ? \$ ( G \* M 0 > 0 . G \* 0 @ 5 @ / > \$ ? / > ( \* H 0 > 8 ? ? 8 M \* @ 6 @ <

(a) G 5 2 & K

(b) G 5 2 \$ @ (

(c) G 5 2 > 0

(d) 8 - @ \* >

**Answer: (b)**

Parasitic (parasitoid) species occur in: 1) certain beetles such as some Carabid species whose larvae parasitize other insects; 3) many flies (e.g., Tachinidae); and 5) numerous wasps (Ichneumonidae, Braconidae). Centipedes are free-living predators and termites are detritivorous; neither group contains parasitoid species. Thus parasitic species are present in three of the five groups.

([iasexpress.net](https://www.iasexpress.net/ie-pedia/consider-the-following-5/?utm\_source=openai))

Q 19. (? . M ( 2 ? ? \$ \* L ' K \* 0 5 ? > 0 @ ? :

1. . B + 2 @

2. A 2 M % @ ( 9 I 0 M 8 - M 0 > . )

3. 8 K / > , @ (

\* / A M \$ . G 8 G ? \$ ( G . 0 A 2 ( + G , ? 2 @ ) G 9 H ?

(a) G 5 2

(b) G 5 2 & K

(c) 8 - @ \$ @ (

(d) K ( 9 @

**Answer: (c)**

Groundnut (*Arachis hypogaea*), horse-gram (*Macrotyloma uniflorum*) and soybean (*Glycine max*) are all legumes belonging to the family Fabaceae; hence all three listed plants are members of the pea family. ([blogs.cornell.edu](https://blogs.cornell.edu/worldcrops/crops/crops-alphabetical/peanut-groundnut/?utm\_source=openai))

- Q20.** (? .M(2? ?\$ %(K \*0 5? >0 @ ? :  
 %(-I: !?/( +M2> +I M8 K 5(M/ @5 (8 0 M7#) '(?/., 1972 G '@( " \* @  
 /> 9Hd  
 %(-II: !?/( +M2> +I M8 (M/ (M\$A > 0 M\$ \*@\$> 9Hd  
 \*0K M\$ %(K G 8 , ' .G , (? .M(2? ?\$ .G 8G L(-8> 89@ 9H?
- (a) %(-I 0 %(-II &K(K 89@ 9H \$%> %(-II, %(-I @ 5M/> M/> 0\$> 9H  
 (b) %(-I 0 %(-II &K(K 89@ 9H , ? \$A %(-II, %(-I @ 5M/> M/> (9@ 0\$> 9  
 (c) %(-I 89@ 9H, ? \$A %(-II 89@ (9@ 9H  
 (d) %(-I 89@ (9@ 9H, ? \$A %(-II 89@ 9H

**Answer: (c)**

The Indian Flying Fox (*Pteropus medius/giganteus*) was historically listed in the vermin category (Schedule V, now eligible for declaration under Sec-62) of the Wild Life (Protection) Act 1972, so Statement I is correct. It is a large fruit-bat that feeds on fruits/nectar and aids pollination; it does NOT suck blood, so Statement II is wrong. Hence only I is correct (option c). ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/consider-the-following-statements-141/?utm\_source=openai))

**Q21. The organisms "Cicada, Frog hopper and Pond skater" are:**

- (a) Birds  
 (b) Fish  
 (c) Insects  
 (d) Reptiles

**Answer: (c)**

Cicadas (super-family Cicadoidea), froghoppers (family Cercopidae, spittlebugs) and pond skaters or water striders (family Gerridae) all belong to class Insecta (order Hemiptera). Therefore the group comprises insects (option c). ([britannica.com](https://www.britannica.com/animal/frog hopper?utm\_source=openai))

**Q22. Consider the following statements:**

**Statement-I:**

Many chewing gums found in the market are considered a source of environmental pollution.

**Statement-II:**

Many chewing gums contain plastic as gum base.

**Which one of the following is correct in respect of the above statements?**

- (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I**
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

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**Answer: (a)**

Modern chewing-gum bases are often synthetic rubbers such as polyethylene and polyisobutylene—i.e. plastics. Studies show gums release micro-plastics and, when littered, persist on pavements, making them a recognised source of environmental pollution. Thus both statements are correct and Statement II (plastic content) directly explains Statement I (pollution), so option a is right. ([acs.org](https://www.acs.org/pressroom/presspacs/2025/march/chewing-gum-can-shed-microplastics-into-saliva-pilot-study-finds.html?utm\_source=openai))

**Q23. Consider the following pairs:**

**Country — Animal found in its natural habitat**

1. Brazil — Indri
2. Indonesia — Elk
3. Madagascar — Bonobo

**How many of the pairs given above are correctly matched?**

- (a) Only one
- (b) Only two
- (c) All three
- (d) None**

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**Answer: (d)**

Indri (Indri indri) is a lemur found only in Madagascar, not Brazil. Elk (Cervus canadensis) occur in North America and parts of temperate Asia, not Indonesia. Bonobos (Pan paniscus) are endemic to the Democratic Republic of Congo, not Madagascar. Hence none of the three pairs is correctly matched (option d). ([britannica.com](https://www.britannica.com/animal/indri-lemur-species?utm\_source=openai))

**Q25. Consider the following statements:**

1. Lions do not have a particular breeding season.
  2. Unlike most other big cats, cheetahs do not roar.
  3. Unlike male lions, male leopards do not proclaim their territory by scent marking.
- Which of the statements given above are correct?

**(a) 1 and 2 only**

- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

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**Answer: (a)**

Lions are polygamous breeders that mate throughout the year, so they lack a specific breeding season. ([britannica.com](https://www.britannica.com/animal/lion/Reproduction-and-life-cycle?utm\_source=openai))  
Cheetahs cannot roar because their hyoid apparatus is fixed; instead they purr, chirp and growl. ([britannica.com](https://www.britannica.com/one-good-fact/which-big-cat-purrs-instead-of-roaring?utm\_source=openai))  
Male leopards, like other big cats, stake out territory by urine-spraying, rubbing and scratching vegetation, i.e., scent-marking. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Scent\_rubbing?utm\_source=openai))  
Hence only statements 1 and 2 are correct.

**Q28. Which one of the following trees exhibits an obligate relationship with an insect that has co-evolved with it and is the only insect that can pollinate this tree?**

**(a) Aonla**

- (b) Mahua
- (c) Sandal
- (d) Semal (Silk Cotton)

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**Answer: (a)**

Aonla (Indian gooseberry, *Phyllanthus emblica*) belongs to the leafy group in which many tree species are pollinated exclusively by species-specific *Epicephala* moths; this is an obligate mutualism—without the moth the tree cannot set seed, and the moth's larvae develop only in its fruit. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Phyllanthus?utm\_source=openai)) Mahua is mainly bat-pollinated, Sandalwood is insect- and wind-pollinated, and Semal is pollinated by bats and birds, none of which involve a single co-evolved insect pollinator.

**Q29. Consider the following:**

1. Butterfly
2. Fish
3. Frog

**How many of the above undergo metamorphosis?**

- (a) Only one
- (b) Only two
- (c) All three**
- (d) None

**Answer: (c)**

Metamorphosis is the abrupt post-embryonic restructuring seen in butterflies (holometabolous insect cycle), frogs (tadpole to adult) and in several fish taxa such as lampreys, eels and flatfish that remodel body shape and physiology under thyroid control.

([britannica.com](https://www.britannica.com/science/metamorphosis?utm\_source=openai)) Hence all three groups contain species that undergo metamorphosis.

**Q30. Consider the following trees:**

1. Cashew
2. Papaya
3. Red Sandalwood

**How many of the above trees are native to India?**

- (a) Only one**
- (b) Only two
- (c) All three
- (d) None

**Answer: (a)**

Red Sandalwood (*Pterocarpus santalinus*) is endemic to the southern Eastern Ghats of India, whereas Cashew (*Anacardium occidentale*) and Papaya (*Carica papaya*) are New-World species introduced from South America/Meso-america. Hence only one of the three listed trees is native to India.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Pterocarpus\_santalinus?utm\_source=openai))

**Q90. According to the Environmental Protection Agency (EPA), which one of the following is the largest source of sulphur dioxide emissions?**

- (a) Locomotives using fossil fuels
- (b) Ships using fossil fuels
- (c) Extraction of metals from ores
- (d) Power plants using fossil fuels**

**Answer: (d)**

According to the U.S. Environmental Protection Agency, the largest source of SO<sub>2</sub> released into the atmosphere is the burning of fossil fuels at power plants; other sources such as metal smelting, ships or locomotives are far smaller contributors.

([epa.gov](https://www.epa.gov/so2-pollution/sulfur-dioxide-basics?utm\_source=openai))

**Q96. Consider the following statements:**

**Statement-I:**

Recently, the European Parliament approved the Net-Zero Industry Act.

**Statement-II:**

The European Union aims to achieve carbon neutrality by the year 2040 and therefore intends to develop its clean technologies by that time.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect**
- (d) Statement-I is incorrect, but Statement-II is correct

**Answer: (c)**

The European Parliament approved the Net-Zero Industry Act in its plenary vote of 25 April 2024, so Statement-I is correct ([europarl.europa.eu](https://www.europarl.europa.eu/news/en/press-room/202404191PR20568/meps-adopt-plans-to-boost-europe-s-net-zero-technology-production?utm\_source=openai)). The European Climate Law sets a legally binding objective for the EU to achieve climate-neutrality by 2050 (with a proposed 90 %-reduction target for 2040), not by 2040; therefore Statement-II is incorrect ([climate.ec.europa.eu](https://climate.ec.europa.eu/eu-action/european-climate-law\_lt?utm\_source=openai)). Because only Statement-I is correct, option (c) is the right choice.

— 2023 —

**Q3. (? . M (2 ? ? \$ 5 C M 7 K \* 0 5 ? > 0 @ ? :**

1. 92 (*Artocarpus heterophyllus*)

2. 9A (*Madhuca indica*)

3. 8 > L ( (*Tectona grandis*)

\* 0 M / A M \$ . G 8 G ? \$ ( G \* 0 M # \* > \$ @ 5 C M 7 9 H ?

- (a) G 5 2
- (b) G 5 2 & K**
- (c) 8 - @ \$ @ (
- (d) K - @ ( 9 @

**Answer: (b)**

Jackfruit (*Artocarpus heterophyllus*) is an evergreen tropical tree and does not shed all leaves seasonally. Mahua (*Madhuca indica*) occurs in dry deciduous forests and is classified as deciduous, while teak (*Tectona grandis*) is a well-known large deciduous hardwood. Hence two of the three listed trees are deciduous.

([britannica.com](https://www.britannica.com/plant/jackfruit?utm\_source=openai))

**Q10. Consider the following trees:**

1. Jackfruit (*Artocarpus heterophyllus*)
2. Mahua (*Madhuca indica*)
3. Teak (*Tectona grandis*)

How many of the above are deciduous trees?

- (a) Only one  
**(b) Only two**  
 (c) All three  
 (d) None

**Answer: (b)**

Mahua (*Madhuca indica*) and Teak (*Tectona grandis*) are typical Indian dry-/moist-deciduous trees, shedding their leaves seasonally. Jackfruit (*Artocarpus heterophyllus*) is an evergreen tree that retains foliage year-round. Hence, two of the three listed species are deciduous. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/consider-the-following-trees/?utm\_source=openai))

**Q 18.** (? .M(2? ?\$ % (K \*0 5? >0 @ ? :  
 %(-I : ->0\$, \*(G 8M5 M 0M > 2 M7M/K G ,>5 B&, 5?&M/A\$ \$M\*(M( 0(G  
 K/2G \*0 (?0M-0 9Hd  
 %(-II : &G6 .G 5?&M/A\$ \$M\*>&( G 2? .-8G- . 60% K/2G \*0 '>0?\$ \$> \*  
 \*0K M\$ %(K G ,>0G .G (? .M(2? ?\$ .G 8G L(-8> 89@ 9H?

- (a) %(-I 0 %(-II &K(K 89@ 9H \$%> %(-II, %(-I @ 89@ 5M/> M/> 9H  
 (b) %(-I 0 %(-II &K(K 89@ 9H \$%> %(-II, %(-I @ 89@ 5M/> M/> (9@ 9H  
**(c) %(-I 89@ 9H ?(M\$A %(-II 2\$ 9H**  
 (d) %(-I 2\$ 9H ?(M\$A %(-II 89@ 9H

**Answer: (c)**

India still generates the bulk of its electricity from coal (around 70 % of actual generation in 2024–25), so Statement I is true. ([economictimes.indiatimes.com](https://economictimes.indiatimes.com/industry/renewables/paradox-of-indias-energy-transition-coal-phase-out-or-renewables-phase-in/articleshow/121356341.cms?utm\_source=openai)) However, there is no constitutional or statutory requirement that at least 60 % of power \*must\* come from coal; in fact the share is falling and targets favour more renewables. Thus Statement II is false. Therefore option (c) is correct.

- Q19.** Statement I: Over 40 species of Sphagnum occur naturally in India, especially in the Himalayan bogs and the higher Western Ghats, so Statement I is incorrect.
- Statement II: Sphagnum requires acidic, water-logged (bog) conditions and typically colonises humid montane peatlands; thus it thrives only in such acidic wet habitats, validating Statement II.
- Hence Statement I is wrong and Statement II is correct, making option (d) the right choice.
- (a) Both I and II are correct.  
 (b) Both I and II are incorrect.  
 (c) I is correct and II is incorrect.  
 (d) I is incorrect and II is correct.

**Answer: (d)**

Over 40 species of Sphagnum occur naturally in India, especially in the Himalayan bogs and the higher Western Ghats, so Statement I is incorrect.

([https://en.wikipedia.org/wiki/Sphagnum\\_girgensohnii](https://en.wikipedia.org/wiki/Sphagnum_girgensohnii)) Sphagnum requires acidic, water-logged (bog) conditions and typically colonises humid montane peatlands; thus it thrives only in such acidic wet habitats, validating Statement II. (<https://www.greenwashingindex.com/sphagnum-moss-vs-peat-moss/>) Hence Statement I is wrong and Statement II is correct, making option (d) the right choice.

**Q20. Consider the following:**

1. Aerosols
2. Foam agents
3. Fire retardants
4. Lubricants

In the making of how many of the above are hydrofluorocarbons used?

- (a) Only one  
 (b) Only two  
 (c) Only three  
 (d) All four

**Answer: (c)**

Hydrofluorocarbons are widely used as aerosol propellants, as foam-blowing agents in polyurethane and other insulation foams, and as clean-agent gaseous fire-suppression chemicals such as HFC-227ea. They are not themselves used as base ingredients of lubricants (special polyol-ester oils are blended with HFC refrigerants instead). Hence HFCs are involved in three of the four listed applications.

(<https://www.epa.gov/climate-hfcs-reduction/sector-fact-sheets-0>)

**Q23. Consider the following statements:**

**Statement-I: Carbon markets are likely to be one of the most widespread tools in the fight against climate change.**

**Statement-II: Carbon markets transfer resources from the private sector to the State.**

**Which one of the following is correct in respect of the above statements?**

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I**
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

**Answer: (b)**

Cap-and-trade and offset markets are now operating on every continent and are regarded by policymakers as central instruments for meeting climate targets, validating Statement-I. Where allowances are auctioned, companies pay governments—e.g., EU ETS auctions have channelled over €230 billion to Member-State budgets—showing a resource transfer from the private sector to the State, so Statement-II is also correct. However, that fiscal transfer is a consequence, not the explanatory logic for why carbon markets fight climate change; therefore Statement-II does not explain Statement-I. ([climate.ec.europa.eu](https://climate.ec.europa.eu/eu-action/carbon-markets/eu-emissions-trading-system-eu-ets/auctioning-allowances\_en?utm\_source=openai))

**Q38. Consider the following statements:**

**Once the Central Government notifies an area as a 'Community Reserve'**

- 1. the Chief Wildlife Warden of the State becomes the governing authority of such forest,**
- 2. hunting is not allowed in such area,**
- 3. people of such area are allowed to collect non-timber forest produce,**
- 4. people of such area are allowed traditional agricultural practices.**

**How many of the above statements are correct?**

- (a) Only one
- (b) Only two
- (c) Only three**
- (d) All four

**Answer: (c)**

After notification as a Community Reserve, section 33 (read with s. 36C (2)) vests overall control in the Chief Wildlife Warden, so 1 is correct. Hunting is prohibited because the sanctuary-style restrictions of sections 27–33 apply—so 2 is correct. Traditional rights such as regulated collection of non-timber forest produce are ordinarily allowed, so 3 is correct. However, any change in land-use—including fresh shifting cultivation—needs prior approval of the Reserve Management Committee and the State Government (s. 36C (3)); therefore blanket permission for traditional agriculture cannot be presumed—statement 4 is incorrect. Hence three out of four statements are correct. ([sooperkanoon.com](https://sooperkanoon.com/act/14584/wild-life-protection-act-1972-section-36c?utm\_source=openai))

**Q59. Consider the following statements regarding mercury pollution:**

1. Gold mining activity is a source of mercury pollution in the world.
2. Coal-based thermal power plants cause mercury pollution.
3. There is no known 'safe level' of exposure to mercury.

How many of the above statements are correct?

- (a) Only one
- (b) Only two**
- (c) All three
- (d) None

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**Answer: (b)**

Artisanal and small-scale gold-mining uses mercury amalgamation, and coal combustion releases mercury to the atmosphere, so statements 1 and 2 are correct. While WHO flags mercury as highly toxic, regulatory agencies (e.g., US EPA, Health Canada) still define reference 'tolerable' blood or air levels, so UPSC treated the absolute 'no safe level' assertion as incorrect; thus only two statements are correct.

([drishtias.com](https://www.drishtias.com/prelims-analysis/2023-prelims-analysis))

**Q66. With reference to coal-based thermal power plants in India, consider the following statements:**

1. None of them uses seawater.
2. None of them is set up in a water-stressed district.
3. None of them is privately owned.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None**

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**Answer: (d)**

Several Indian coal-based plants such as Mundra (Gujarat) and Tuticorin (Tamil Nadu) use seawater for cooling, so Statement 1 is incorrect. Plants like Chandrapur (Maharashtra) lie in water-stressed districts, contradicting Statement 2. Private firms (e.g., Tata Power, Adani Power) own large coal stations, so Statement 3 is also wrong. As none of the statements is correct, the answer is "None".

**Q68. Consider the following activities:**

1. Spreading finely ground basalt rock on farmlands extensively
2. Increasing the alkalinity of oceans by adding lime
3. Capturing carbon dioxide released by various industries and pumping it into abandoned subterranean mines in the form of carbonated waters

**How many of the above activities are often considered and discussed for carbon capture and sequestration?**

- (a) Only one
- (b) Only two
- (c) All three**
- (d) None

**Answer: (c)**

Enhanced rock weathering by spreading basalt, ocean alkalinity enhancement by liming, and geological storage of CO<sub>2</sub> by injecting carbonated water into depleted mines are all prominently researched carbon capture and sequestration (CCS) strategies. Consequently, all three listed activities fall under CCS discussions.

**Q76. Consider the following statements:**

**Statement-I : According to the United Nations' 'World Water Development Report, 2022', India extracts more than a quarter of the world's groundwater withdrawal each year.**

**Statement-II : India needs to extract more than a quarter of the world's groundwater each year to satisfy the drinking water and sanitation needs of almost 18% of world's population living in its territory.**

**Which one of the following is correct in respect of the above statements?**

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect**
- (d) Statement-I is incorrect but Statement-II is correct

**Answer: (c)**

The key gives option (c): Statement-I is correct (UN-WWDR-2022 notes India draws ~25-27 % of global groundwater withdrawals), but Statement-II is incorrect because the bulk (~89 %) of India's groundwater is used for irrigation, not chiefly for drinking water and sanitation.  
([upscprep.com](https://www.upscprep.com/content/files/2023/06/GS1.pdf))

Q79. (? .M(2? ?\$ %(K \*0 5? >0 @ ? :

1. ->0\$ .G H5 5?5?'\$> \*M0, '( 8.?\$/> H5? 8 0 M7# G &M&G6M/K K S  
9A 9H d

2. H5 5?5?'\$> \*M0, '( 8.?\$/> , \*(G M7G\$M0>'? >0 G \$0M \$, H5? 8 8>  
8 M09 89?\$ 2>--89-> ?\$> 5?(?/ \$M0# 0(G G 2? .9\$M\$M5\*B0M# \*M050M\$  
\*0M/A M\$ %(K .G 8G L(-8>/8G 89@ 9H/9H ?

- (a) G 5 2 1  
(b) G 5 2 2  
**(c) 1 0 2 &K(K**  
(d) ( \$K 1 0 ( 9@ 2

**Answer: (c)**

The official key marks option (c); both statements are correct. Section 41 of the Biological Diversity Act 2002 establishes BMCs for 'promoting conservation, sustainable use and documentation of biodiversity', and Rule 22(10) (BD Rules 2004) empowers them to levy collection fees and facilitate access-and-benefit-sharing at the local level. Thus BMCs are instruments for conservation as well as gatekeepers for benefit-sharing. ([upscprep.com](https://www.upscprep.com/content/files/2023/06/GS1.pdf))

**Q99. Consider the following heavy industries:**

1. Fertilizer plants
2. Oil refineries
3. Steel plants

**Green hydrogen is expected to play a significant role in decarbonizing how many of the above industries?**

- (a) Only one  
(b) Only two  
**(c) All three**  
(d) None

**Answer: (c)**

Green hydrogen can replace fossil-derived hydrogen across: (i) Fertilizer plants where for ammonia production ([en.wikipedia.org](https://en.wikipedia.org/wiki/Green\_hydrogen)); (ii) Oil refineries that use large volumes of hydrogen for desulfurisation and hydrocracking ([isa-ghic.org](https://isa-ghic.org/petrol-refining?utm\_source=openai)); and (iii) Steel plants, where hydrogen-based direct-reduced iron can eliminate coal coke ([en.wikipedia.org](https://en.wikipedia.org/wiki/Green\_hydrogen)). Therefore, all three listed heavy industries stand to be decarbonised by green hydrogen.

UPSC 2022

Environment &amp; Ecology › Climate Change &amp; Greenhouse Gases

easy

Q 21. Flooded paddy-rice fields create anaerobic conditions that favour methanogenic archaea and also generate nitrous oxide during nitrification–denitrification cycles; IPCC and FAO studies identify rice cultivation as the largest cropland source of both CH<sub>4</sub> and N<sub>2</sub>O, far exceeding crops such as sugarcane or wheat. Hence, rice is the most important anthropogenic source among the following options.

- (a) Rice  
(b) Paddy  
(c) Wheat  
(d) Sugarcane

**Answer: (b)**

Flooded paddy-rice fields create anaerobic conditions that favour methanogenic archaea and also generate nitrous oxide during nitrification–denitrification cycles; IPCC and FAO studies identify rice cultivation as the largest cropland source of both CH<sub>4</sub> and N<sub>2</sub>O, far exceeding crops such as sugarcane or wheat. Hence, rice is the most important anthropogenic source among the following options.

([pmc.ncbi.nlm.nih.gov](https://pmc.ncbi.nlm.nih.gov/articles/PMC8244889/?utm\_source=openai))

UPSC 2022

Environment &amp; Ecology › Sustainable Agriculture &amp; Forestry

moderate

Q 22. The AWD or 'dry-seeded' system drains the field once the water table falls below a threshold and refloods it, typically saving 25-40 % irrigation water and the associated pump energy, while research shows it maintains (or improves) grain yield—so Statements 1 and 3 are correct. Numerous field studies and meta-analyses report 'no yield penalty'; therefore Statement 2 is wrong. ([sciencedirect.com](https://www.sciencedirect.com/science/article/pii/S0378377420304017?utm\_source=openai))

1. AWD system saves 25-40% irrigation water and pump energy.  
2. AWD system maintains or improves grain yield.  
3. AWD system has no yield penalty.  
Which of the following statements are correct?  
(a) 1 and 2 only  
(b) 1 and 3 only  
(c) 1, 2 and 3  
(d) 2 and 3 only

- (a) 1 and 2 only  
(b) 1 and 3 only  
(c) 1, 2 and 3  
(d) 2 and 3 only

**Answer: (c)**

The AWD or 'dry-seeded' system drains the field once the water table falls below a threshold and refloods it, typically saving 25-40 % irrigation water and the associated pump energy, while research shows it maintains (or improves) grain yield—so Statements 1 and 3 are correct. Numerous field studies and meta-analyses report 'no yield penalty'; therefore Statement 2 is wrong. ([sciencedirect.com](https://www.sciencedirect.com/science/article/pii/S0378377420304017?utm\_source=openai))

UPSC 2022

Environment &amp; Ecology › International Environmental Treaties &amp; Summits

easy

Q 41. The Climate Action Tracker (CAT) is an independent scientific database produced jointly by research organisations Climate Analytics and the NewClimate Institute; it is not a wing of the IPCC, a UNFCCC committee, nor a UNEP–World Bank agency. Therefore option (a) is correct. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/climate-action-tracker-which-monitors-the-emission-reduction-pledges-of-different-countries-is-a-2/?utm\_source=openai))

- (a) The Climate Action Tracker (CAT) is an independent scientific database produced jointly by research organisations Climate Analytics and the NewClimate Institute; it is not a wing of the IPCC, a UNFCCC committee, nor a UNEP–World Bank agency. Therefore option (a) is correct.  
(b) The Climate Action Tracker (CAT) is a wing of the IPCC, a UNFCCC committee, and a UNEP–World Bank agency.  
(c) The Climate Action Tracker (CAT) is a wing of the IPCC, a UNFCCC committee, and a UNEP–World Bank agency.  
(d) The Climate Action Tracker (CAT) is a wing of the IPCC, a UNFCCC committee, and a UNEP–World Bank agency.

**Answer: (a)**

The Climate Action Tracker (CAT) is an independent scientific database produced jointly by research organisations Climate Analytics and the NewClimate Institute; it is not a wing of the IPCC, a UNFCCC committee, nor a UNEP–World Bank agency. Therefore option (a) is correct. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/climate-action-tracker-which-monitors-the-emission-reduction-pledges-of-different-countries-is-a-2/?utm\_source=openai))

Q42. (? .M(2? ?\$ %(K \*0 5? >0 @ ? :

1. “ 25>/A 8.B9 (&? M2> .G M0A\*)” \$0M0>7M M0@/ H0-2>- 8 ( 9H, M0?/> K \*M0G0?\$ 0\$> 9H 0 (M9G 2>\$> 9Hd
2. \$00>7M M0@/ 0M > G 8@ (G 25>/A 8.B9 @ -> @&>0@ 8G 5H6M51
3. EP100, 0M > & M7\$> .G (5\*M050M\$( K \*M0G0?\$ 0(G 5 \$M80M ( (M/E 0\$G 9A \*M0\$?8M\*0M'>\$M. , "<\$ G 2? \*M0\$?,&M' M0#@ \*(?/K K 8>%
4. A ->0\$@/ \*(?/> EP100 @ 8&8M/ 9H d
5. \$00>7M M0@/ 0M > G 8@ “ B +M2K0>2> ” > 8 ?5>2/ 9Hd \*/A M\$ %(K .G L(-8G 89@ 9H ?

- (a) 1, 2, 4 0 5  
**(b) G52 1, 3 0 4**  
 (c) G52 2, 3 0 5  
 (d) 1, 2, 3 0 5

**Answer: (b)**

1 is true: The Climate Group is an international non-profit networking organisation. 2 is false: EP100 was launched by The Climate Group with the Alliance to Save Energy, not the International Energy Agency. 3 is true: EP100 unites firms pledging energy-efficiency innovation for competitive, low-emission growth. 4 is true: Indian companies such as Mahindra & Mahindra and Infosys are EP100 members. 5 is false: the Under2 Coalition's secretariat is provided by The Climate Group, not the IEA. Hence only 1, 3 and 4 are correct (option b). ([upscprep.com](https://www.upscprep.com/upsc-prelims-2022-question-paper-and-key/?utm\_source=openai))

Q43. “/ &? (\$M0 ( 0 +>8M+K08 \*C%M5@ \*0 +G G >\$G 9H , \$K (?7M 0M7 .C \*M0 >0 >0M/ 0\$G 9H ?” (? .M(2? ?\$ .G 8G 6? 58>& > L(-8> %( 80M5 \*M0\$?(?'? \$M5 0\$> 9H ?

- (a) 6? 58>& .G 2- M0 .G 8\$9@ 58>&(, 58>& \$ M70# 0 5>7M\*( 6>. ?2 ?  
 (b) 6H5>2K G 2? \*K7 '>0 ,(\$> 9H, ?8 \*0 . 2@, K6? @/ ( M08M G6?/(), .C 8M\$('>0@ &? +2\$G -+B2\$G 9H d  
 (c) 6? 58>& 8 \$A2( 0 .C\$ \*0?8 0# ,( > 0 (G .G .9\$M\$M5\*B0M# -B.? > (?->?  
**(d) @5K \*&>0M% '>\$A 0 \*K7 K G 56K7# K , "<> &G\$G 9H d**

**Answer: (d)**

Wetlands are compared to 'Earth's kidneys' because their aquatic vegetation filters water, absorbing heavy metals and excess nutrients, thereby detoxifying and purifying the flow—function (d). The other options describe hydrological cycling, food-web support or sediment control, which do not capture the kidney-like filtration role. ([iasuniverse.com](https://www.iasuniverse.com/answers-with-explanation-upsc-prelims-gs1-paper-2022/5/?utm\_source=openai))

**Q44. WHO has set the 24-hour average limit for PM<sub>2.5</sub> at 15 µg/m<sup>3</sup> and the annual average limit at 5 µg/m<sup>3</sup>. Which of the following statements are correct?**

1. PM<sub>2.5</sub> is a primary pollutant.
2. Peak ground-level ozone forms in sunny, hot conditions—not 'inclement' weather—so 2 is wrong. PM<sub>10</sub> particles generally lodge in upper airways; only finer PM<sub>2.5</sub> can cross into the bloodstream, so 3 is wrong. Excess ozone aggravates asthma, so 4 is correct. Thus only 1 and 4 are correct (option b).
3. PM<sub>10</sub> is a secondary pollutant.
4. Excess ozone aggravates asthma.

- (a) 1, 3 and 4  
**(b) 1 and 4**  
 (c) 2, 3 and 4  
 (d) 1 and 2

**Answer: (b)**

WHO 2021 guidelines set PM<sub>2.5</sub> limits at 15 µg/m<sup>3</sup> (24-h) and 5 µg/m<sup>3</sup> (annual), so statement 1 is correct. Peak ground-level ozone forms in sunny, hot conditions—not 'inclement' weather—so 2 is wrong. PM<sub>10</sub> particles generally lodge in upper airways; only finer PM<sub>2.5</sub> can cross into the bloodstream, so 3 is wrong. Excess ozone aggravates asthma, so 4 is correct. Thus only 1 and 4 are correct (option b). ([iasuniverse.com](https://www.iasuniverse.com/answers-with-explanation-upsc-prelims-gs1-paper-2022/5/?utm\_source=openai))

**Q45. With reference to "Gucchi" sometimes mentioned in the news, consider the following statements :**

1. It is a fungus.
2. It grows in some Himalayan forest areas.
3. It is commercially cultivated in the Himalayan foothills of north-eastern India.

Which of the statements given above is/are correct ?

- (a) 1 only  
 (b) 3 only  
**(c) 1 and 2**  
 (d) 2 and 3

**Answer: (c)**

Gucchi is the common name for the Himalayan morel mushroom (*Morchella* spp.), a fungus (Statement 1) that grows wild in coniferous forests of Jammu-Kashmir, Himachal Pradesh, Uttarakhand and other Himalayan areas (Statement 2). It has so far defied large-scale commercial cultivation anywhere in India, including the north-eastern foothills, because it requires very specific symbiotic conditions (Statement 3 is false). Hence only statements 1 and 2 are correct. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2022-question-paper-with-answer-key-general-studies-paper-1/?utm\_source=openai))

**Q47. Which of the following is not a bird ?**

- (a) Golden Mahseer
- (b) Indian Nightjar
- (c) Spoonbill
- (d) White Ibis

**Answer: (a)**

Golden Mahseer (*Tor putitora*) is a large freshwater fish, not a bird, whereas the Indian Nightjar, Spoonbill and White Ibis are all avian species. Hence option (a) is the only non-bird. ([iasuniverse.com](https://www.iasuniverse.com/answers-with-explanation-upsc-prelims-gs1-paper-2022/5/?utm\_source=openai))

**Q48. Which of the following are nitrogen-fixing plants ?**

1. Alfalfa
2. Amaranth
3. Chickpea
4. Clover
5. Purslane (Kulfa)
6. Spinach

Select the correct answer using the code given below :

- (a) 1, 3 and 4 only
- (b) 1, 3, 5 and 6 only
- (c) 2, 4, 5 and 6 only
- (d) 1, 2, 4, 5 and 6

**Answer: (a)**

Alfalfa, Chickpea and Clover are legumes that host Rhizobium bacteria in root nodules and therefore fix atmospheric nitrogen. Amaranth, Purslane and Spinach are non-leguminous herbs and do not fix nitrogen. Thus the correct set is 1, 3 and 4 only. ([iasuniverse.com](https://www.iasuniverse.com/answers-with-explanation-upsc-prelims-gs1-paper-2022/5/?utm\_source=openai))

**Q49. "Biorock technology" is talked about in which one of the following situations ?**

- (a) Restoration of damaged coral reefs
- (b) Development of building materials using plant residues
- (c) Identification of areas for exploration/extraction of shale gas
- (d) Providing salt licks for wild animals in forests/protected areas

**Answer: (a)**

Biorock (Mineral Accretion) technology passes a low-voltage electric current through submerged metal frameworks, causing calcium carbonate to precipitate and providing a substrate on which broken coral fragments grow several times faster, so it is specifically used for restoring damaged coral reefs. It is unrelated to building materials from plant waste, shale-gas exploration, or wildlife salt licks. ([iasgoogle.com](https://iasgoogle.com/editorial\_detail/upsc-prelims-2022-general-studies-gs-answer-keys?utm\_source=openai))

**Q50. The "Miyawaki method" is well known for the :**

- (a) Promotion of commercial farming in arid and semi-arid areas
- (b) Development of gardens using genetically modified flora
- (c) Creation of mini forests in urban areas**
- (d) Harvesting wind energy on coastal areas and on sea surfaces

**Answer: (c)**

The Miyawaki technique, devised by Japanese botanist Akira Miyawaki, involves planting many native saplings close together to build very dense, self-sustaining 'mini-forests', especially in small urban plots. It is not connected with commercial farming, GM gardens or wind-energy projects. Hence option (c) is correct. ([testbook.com](https://testbook.com/question-answer/the-miyawaki-method-is-well-known-for--629ddc108962ac48e610969e?utm\_source=openai))

**Q 75. (? . M ( 2 ? ? \$ . G 8 G L (- 8 > , \* 0 M / > 5 0 # ( 8 0 M 7 # ) ' ? ( ? / . , 1 9 8 6 G ( M \$**

- (a) G ( M & M 0 @ / 2 / K
- (b) G ( M & M 0 @ / - B 2 , K 0 M !
- (c) G ( M & M 0 @ / - B 2 \* M 0 > ' ? 0 #**
- (d) 0 > 7 M M 0 @ / 2 5 ? > 8 - ? 0 #

**Answer: (c)**

The Central Ground Water Authority (CGWA) was constituted in 1997 under Section 3(3) of the Environment (Protection) Act, 1986 to regulate and control groundwater development; the other three bodies were created either by executive order or separate statutes and are not established under the 1986 Act. ([testbook.com](https://testbook.com/question-answer/which-one-of-the-following-has-been-constituted-un--629ddcc3254f5c68989cf9ef?utm\_source=openai))

**Q80. Which one of the following best describes the term "greenwashing"?**

- (a) Conveying a false impression that a company's products are eco-friendly and environmentally sound**
- (b) Non-inclusion of ecological/environmental costs in the Annual Financial Statements of a country
- (c) Ignoring the disastrous ecological consequences while undertaking infrastructure development
- (d) Making mandatory provisions for environmental costs in a government project/programme

**Answer: (a)**

Greenwashing is a marketing/PR tactic in which a firm misleads the public by projecting its products or practices as environmentally friendly without substantial action; hence option (a) is correct. The other options refer to accounting practices, infrastructure externalities or government budgeting, none of which capture the idea of deliberate 'false green' advertising. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2022-question-80/?utm\_source=openai))

Q 84. (? .M (2? ?\$ % (K \* 0 5? > 0 @ ? :

1. A 0 > \$ .G -> 0\$ > 5? 6 > 2\$. 8 L 0 \* > 0 M 9 H d

2. G 0 2 .G \* B 0 M # \$ 8 L 0 6 M \$ ? - 8 . M \* ( M ( \$ 0 0 > 7 M M 0 @ / 9 5 > ! M ! > 9 H d

3. K .G -> 0\$ @ 5? 6 > 2\$. \$ H 0 \$ @ 9 A 8 L 0 \* M 0 > 6 - 5 ? & M / A \$ \* 0 ? / K (> 9 H d  
\* / A M \$ % ( K .G L (- 8 G 8 9 @ 9 H / 9 H ?

(a) 1 0 2

(b) G 5 2 2

(c) 1 0 3

(d) G 5 2 3

**Answer: (b)**

India's largest solar park is the 2.25 GW Bhadla Solar Park in Rajasthan, not in Gujarat, so Statement 1 is incorrect. Cochin International Airport in Kerala became the world's first fully solar-powered international airport, so Statement 2 is correct. The biggest floating solar PV plant (at the time of the exam) is NTPC's 100 MW project at Ramagundam, Telangana, not Goa, making Statement 3 incorrect. Therefore only Statement 2 is correct — option (b).

([educemy.com])([https://educemy.com/blog/upsc-prelims-2022-question-84/?utm\\_source=openai](https://educemy.com/blog/upsc-prelims-2022-question-84/?utm_source=openai))

Q89. With reference to Indian laws about wildlife protection, consider the following statements:

1. Wild animals are the sole property of the government.

2. When a wild animal is declared protected, such animal is entitled for equal protection whether it is found in protected areas or outside.

3. Apprehension of a protected wild animal becoming a danger to human life is sufficient ground for its capture or killing.

Which of the statements given above is/are correct?

(a) 1 and 2

(b) 2 only

(c) 1 and 3

(d) 3 only

**Answer: (a)**

Section 39 of the Wild Life (Protection) Act, 1972 declares every wild animal to be government property, so statement 1 is right ([unodc.org])([https://www.unodc.org/cld/en/legislation/ind/the\\_wildlife\\_protection\\_act\\_1972/chapter\\_v/article\\_39-49.html?utm\\_source=openai](https://www.unodc.org/cld/en/legislation/ind/the_wildlife_protection_act_1972/chapter_v/article_39-49.html?utm_source=openai)). Once a species is listed (e.g., Schedule I sea cucumbers), it enjoys the same legal protection inside or outside protected areas, validating statement 2 ([en.wikipedia.org])([https://en.wikipedia.org/wiki/Dr.\\_K.K.\\_Mohammed\\_Koya\\_Sea\\_Cucumber\\_Conservation\\_Reserve?utm\\_source=openai](https://en.wikipedia.org/wiki/Dr._K.K._Mohammed_Koya_Sea_Cucumber_Conservation_Reserve?utm_source=openai)). Section 11 allows capture/kill only when the Chief Wildlife Warden is satisfied that the animal \*has become\* dangerous (or is incurably diseased) and other options like capture are impracticable; mere apprehension is insufficient, so statement 3 is wrong ([unodc.org])([https://www.unodc.org/cld/zh/legislation/ind/the\\_wildlife\\_protection\\_act\\_1972/chapter\\_iii/article\\_9\\_11-12.html?utm\\_source=openai](https://www.unodc.org/cld/zh/legislation/ind/the_wildlife_protection_act_1972/chapter_iii/article_9_11-12.html?utm_source=openai))).

**Q90. Certain species of which one of the following organisms are well known as cultivators of fungi?**

- (a) Ant
- (b) Cockroach
- (c) Crab
- (d) Spider

**Answer: (a)**

Leaf-cutter (attine) ants are famous for cultivating mutualistic fungi inside their nests; the ants actively tend these 'fungus gardens' as their primary food source, a behaviour not exhibited by cockroaches, crabs or spiders.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Ant%E2%80%93fungus\_mutualism?utm\_source=openai))

**Q100. Consider the following:**

1. Carbon monoxide
2. Nitrogen oxide
3. Ozone
4. Sulphur dioxide

**Excess of which of the above in the environment is/are cause(s) of acid rain?**

- (a) 1, 2 and 3
- (b) 2 and 4 only
- (c) 4 only
- (d) 1, 3 and 4

**Answer: (b)**

Acid rain forms when sulphur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) react with atmospheric moisture to produce sulphuric and nitric acids. Carbon monoxide and ozone do not create these acids. Hence only statements 2 (NO<sub>x</sub>) and 4 (SO<sub>2</sub>) are relevant, making option (b) correct. ([forumias.com] m/blog/answer-key-upsc-ias-cse-prelims-2022-gs-paper-1-questions/?utm\_source=openai))

— 2021 —

**Q16. The R2 (Responsible Recycling) Code of Practice is an independently audited certification that promotes environmentally sound practices in the electronics-recycling industry, covering worker safety, downstream tracking and hazardous-waste control. It has no relation to wetlands management, low-land farming or generic EIA processes. ([epa.gov](https://www.epa.gov/electronic-s-batteries-management/certified-electronics-recyclers?utm\_source=openai))**

- (a) 2G M M0I(? \*A(0M M0# &M/K .G \*0M/>50#@/ &C7M ? 8G ? .M.G&>0 5M
- (b) 0>.80 (M5G 6( G \$0M \$ ' \$0M0>7M M0@/ .9\$M\$M5 @ 0M&M0 -B.?' > \*
- (c) (? .M(-B.? -B.? \*0 C7? +82K @ G\$@ > 8 50M'( 5M/58M%>
- (d) \*M0> C\$? 8 8>'(K G &K9( .G '\*0M/>50#@/ \*M0->5 2('

**Answer: (a)**

The R2 (Responsible Recycling) Code of Practice is an independently audited certification that promotes environmentally sound practices in the electronics-recycling industry, covering worker safety, downstream tracking and hazardous-waste control. It has no relation to wetlands management, low-land farming or generic EIA processes. ([epa.gov](https://www.epa.gov/electronic-s-batteries-management/certified-electronics-recyclers?utm\_source=openai))

**Q17. Why is there a concern about copper smelting plants?**

1. They may release lethal quantities of carbon monoxide into environment.
2. The copper slag can cause the leaching of some heavy metals into environment.
3. They may release sulphur dioxide as a pollutant.

Select the correct answer using the code given below.

- (a) 1 and 2 only
- (b) 2 and 3 only**
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Answer: (b)**

Copper smelters are major point sources of sulphur dioxide and their slag contains heavy metals that can leach into soil and groundwater, so statements 2 and 3 are correct. Carbon monoxide is not a principal pollutant of concern from these plants, making statement 1 incorrect. ([epa.gov](https://www.epa.gov/stationary-sources-air-pollution/primary-copper-smelting-new-source-performance-standards?utm\_source=openai))

**Q18. With reference to furnace oil, consider the following statements:**

1. It is a product of oil refineries.
2. Some industries use it to generate power.
3. Its use causes sulphur emissions into environment.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3**

**Answer: (d)**

Furnace oil is a heavy residual product obtained in petroleum refineries; many industries and some power plants burn it for heat or electricity; and its high sulphur content leads to significant SO<sub>2</sub> emissions. Therefore all three statements are valid. ([sarthaks.com](https://www.sarthaks.com/2801386/reference-furnace-oil-consider-following-statements-product-refineries-industries-generate?utm\_source=openai))

**Q19. What is blue carbon?**

- (a) Carbon captured by oceans and coastal ecosystems**
- (b) Carbon sequestered in forest biomass and agricultural soils
- (c) Carbon contained in petroleum and natural gas
- (d) Carbon present in atmosphere

**Answer: (a)**

'Blue carbon' refers to carbon captured and stored by marine and coastal ecosystems such as mangroves, seagrass meadows and salt-marshes; it is distinct from terrestrial biomass, fossil fuels and other carbon sources. ([unep.org](https://www.unep.org/explore-topics/oceans-seas/what-we-do/protecting-restoring-blue-carbon-ecosystems?utm\_source=openai))

**Q20. In the nature, which of the following is/are most likely to be found surviving on a surface without soil?**

1. Fern
2. Lichen
3. Moss
4. Mushroom

Select the correct answer using the code given below.

- (a) 1 and 4 only
- (b) 2 only
- (c) 2 and 3**
- (d) 1, 3 and 4

**Answer: (c)**

Lichens (a symbiosis of fungus and alga) and mosses (non-vascular bryophytes) are able to colonise bare rock, bark or other substrates because they absorb water and nutrients directly from the atmosphere; they do not need soil. Ferns are vascular plants that normally root in humus-rich soil, and mushrooms (fungal fruiting bodies) grow on decaying organic matter in or on soil. Hence only statements 2 and 3 apply. ([vajira mandravi.com](https://vajiramandravi.com/upsc-exam/in-the-nature-which-of-the-following-is-are-most-likely-to-be-found-surviving-on-a-surface-without-soil/?utm\_source=openai))

**Q21. Which one of the following is used in preparing a natural mosquito repellent?**

- (a) Congress grass
- (b) Elephant grass
- (c) Lemongrass**
- (d) Nut grass

**Answer: (c)**

Lemongrass (*Cymbopogon citratus*) contains the essential oil citronella, a well-known natural mosquito repellent used in candles, sprays and creams. Congress grass (*Parthenium*), elephant grass and nut grass are not used for this purpose. ([dalvoy.com](https://www.dalvoy.com/upsc/previous-years/2021/upsc-prelims-2021-natural-mosquito-repellent-plant-lemongrass?utm\_source=openai))

**Q22. Consider the following kinds of organisms:**

1. Copepods
2. Cyanobacteria
3. Diatoms
4. Foraminifera

Which of the above are primary producers in the food chains of oceans?

- (a) 1 and 2
- (b) 2 and 3**
- (c) 3 and 4
- (d) 1 and 4

**Answer: (b)**

Primary producers in oceanic food chains are photosynthetic organisms. Cyanobacteria (blue-green algae) and diatoms (unicellular silicaceous algae) fix carbon using sunlight. Copepods and foraminifera are heterotrophic zooplankton that feed on these producers, so only 2 and 3 qualify. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-paper-2021-with-answer-key-general-studies-1/?utm\_source=openai))

**Q23. Consider the following animals:**

1. Hedgehog
2. Marmot
3. Pangolin

**To reduce the chance of being captured by predators, which of the above organism/organisms rolls up and protects its/their vulnerable parts?**

- (a) 1 and 2
- (b) 2 only
- (c) 3 only
- (d) 1 and 3**

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**Answer: (d)**

When threatened, hedgehogs curl into a tight, spiny ball and pangolins roll up, shielding their bodies with keratin scales. Marmots rely on burrows and alarm calls rather than rolling. Therefore, animals 1 and 3 exhibit this defence. ([iasuniverse.com](https://www.iasuniverse.com/answers-with-explanation-upsc-prelims-gs1-paper-2021/3/?utm\_source=openai))

**Q24. With reference to the 'New York Declaration on Forests', which of the following statements are correct?**

1. It was first endorsed at the United Nations Climate Summit in 2014.
2. It endorses a global timeline to end the loss of forests.
3. It is a legally binding international declaration.
4. It is endorsed by governments, big companies and indigenous communities.
5. India was one of the signatories at its inception.

**Select the correct answer using the code given below:**

- (a) 1, 2 and 4**
- (b) 1, 3 and 5
- (c) 3 and 4
- (d) 2 and 5

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**Answer: (a)**

The New York Declaration on Forests (NYDF) was launched at the UN Climate Summit in September 2014 (statement 1) and sets a timeline to halt natural forest loss by 2030 (statement 2). It is voluntary and non-binding, not legally binding (statement 3 incorrect). It is endorsed by governments, corporations and indigenous groups (statement 4 correct). India did not sign in 2014 (statement 5 incorrect). Hence statements 1, 2 and 4 are correct. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/with-reference-to-the-new-york-declaration-on-forests-which-of-the-following-statements-are-correct/?utm\_source=openai))

**Q25. Magnetite particles, suspected to cause neurodegenerative problems, are generated as environmental pollutants from which of the following?**

1. Brakes of motor vehicles
2. Engines of motor vehicles
3. Microwave stoves within homes
4. Power plants
5. Telephone lines

Select the correct answer using the code given below:

- (a) 1, 2, 3 and 5 only  
**(b) 1, 2 and 4 only**  
(c) 3, 4 and 5 only  
(d) 1, 2, 3, 4 and 5

**Answer: (b)**

Magnetite nanoparticles are produced in large quantities by the frictional wear of brake pads, by iron-rich emissions from internal-combustion engines, and by the high-temperature combustion of coal in power plants. Studies partitioning roadside PM show negligible contributions from household microwave ovens or telephone lines. Hence, only 1, 2 and 4 are correct. ([sciencedirect.com](https://www.sciencedirect.com/science/article/abs/pii/S0048969720353572?utm\_source=openai))

**Q26. Which one of the following is a filter feeder?**

- (a) Catfish  
(b) Octopus  
**(c) Oyster**  
(d) Pelican

**Answer: (c)**

Oysters are bivalve molluscs that pump water across their gills and sieve out suspended microscopic food; they are textbook filter feeders. Catfish and pelicans capture larger prey, while octopuses are active hunters, so they do not use filter feeding.

([britannica.com](https://www.britannica.com/science/feeding-behavior?utm\_source=openai))

**Q27. In case of which one of the following biogeochemical cycles, the weathering of rocks is the main source of release of nutrient to enter the cycle?**

- (a) Carbon cycle  
(b) Nitrogen cycle  
**(c) Phosphorus cycle**  
(d) Sulphur cycle

**Answer: (c)**

The phosphorus cycle lacks a significant gaseous phase; phosphate locked in rocks is released mainly by weathering and leaching, making rock weathering the principal natural input of this nutrient. Carbon, nitrogen and sulphur cycles each have major atmospheric reservoirs instead. ([britannica.com](https://www.britannica.com/science/biosphere/The-cycling-of-phosphorus-and-other-essential-nutrients?utm\_source=openai))

**Q28. Which of the following are detritivores?**

1. Earthworms
2. Jellyfish
3. Millipedes
4. Seahorses
5. Woodlice

Select the correct answer using the code given below:

- (a) 1, 2 and 4 only
- (b) 2, 3, 4 and 5 only
- (c) 1, 3 and 5 only**
- (d) 1, 2, 3, 4 and 5

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**Answer: (c)**

Earthworms, millipedes and woodlice feed on decaying organic matter and help recycle nutrients, classifying them as detritivores. Jellyfish are planktonic carnivores and seahorses prey on live zooplankton, so they are not detritivores. ([britannica.com](https://www.britannica.com/animal/earthworm?utm\_source=openai))

**Q29. The 'Common Carbon Metric', supported by UNEP, has been developed for**

- (a) assessing the carbon footprint of building operations around the world**
- (b) enabling commercial farming entities around the world to enter carbon emission trading
- (c) enabling governments to assess the overall carbon footprint caused by their countries
- (d) assessing the overall carbon footprint caused by the use of fossil fuels by the world in a unit time

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**Answer: (a)**

UNEP's Common Carbon Metric (CCM) is a universal protocol for measuring and reporting the greenhouse-gas emissions from the operational phase of buildings, allowing consistent assessment of the carbon footprint of building operations worldwide. It is not designed for farm emissions, national inventories or global fossil-fuel use tallies. ([rpsgroup.com](https://www.rpsgroup.com/about-us/news/common-carbon-metric/?utm\_source=openai))

Q51. Permaculture emphasises poly-culture and soil-building practices like mulching, so it discourages monocropping (1') and considers mulching essential (4'). Conventional chemical farming, which uses high fertiliser/irrigation inputs, often leads to secondary soil salinisation, a problem not seen in permaculture systems (2'). Permaculture designs can be adapted even to semi-arid areas, so statement 3 is correct. Therefore 1, 2 and 4 are correct (option b).

1. Permaculture discourages monocropping (1').  
 2. Permaculture designs can be adapted even to semi-arid areas (2').  
 3. Permaculture systems do not lead to secondary soil salinisation (3').  
 4. Mulching is considered essential in permaculture (4').

- (a) 1 0 3  
 (b) 1, 2 0 4  
 (c) 1 5 2 4  
 (d) 2 0 3

### Answer: (b)

Permaculture emphasises poly-culture and soil-building practices like mulching, so it discourages monocropping (1') and considers mulching essential (4'). Conventional chemical farming, which uses high fertiliser/irrigation inputs, often leads to secondary soil salinisation, a problem not seen in permaculture systems (2'). Permaculture designs can be adapted even to semi-arid areas, so statement 3 is correct. Therefore 1, 2 and 4 are correct (option b).

([forumias.com])(<https://forumias.com/blog/upsc-cse-prelims-2021-answer-key-with-questions-gs-paper-1/>)

Q52. The oil-palm tree (*Elaeis guineensis*) is native to West-Central Africa, not South-East Asia, so statement 1 is false. Palm oil and its derivatives are widely used in cosmetics such as lipstick and in fragrances (statement 2') and are an established feedstock for biodiesel production (statement 3'). Hence option b is correct (option b).

1. The oil-palm tree is native to West-Central Africa, not South-East Asia (1').  
 2. Palm oil and its derivatives are widely used in cosmetics such as lipstick and in fragrances (2').  
 3. Palm oil and its derivatives are an established feedstock for biodiesel production (3').

- (a) 1 5 2 1 0 2  
 (b) 1 5 2 2 0 3  
 (c) 1 5 2 1 0 3  
 (d) 1, 2 0 3

### Answer: (b)

The oil-palm tree (*Elaeis guineensis*) is native to West-Central Africa, not South-East Asia, so statement 1 is false. Palm oil and its derivatives are widely used in cosmetics such as lipstick and in fragrances (statement 2') and are an established feedstock for biodiesel production (statement 3'). Hence option b is correct (option b).

([en.wikipedia.org])([https://en.wikipedia.org/wiki/Elaeis\\_guineensis?utm\\_source=openai](https://en.wikipedia.org/wiki/Elaeis_guineensis?utm_source=openai))

**Q56. Consider the following statements:**

1. The Global Ocean Commission grants licences for seabed exploration and mining in international waters.
2. India has received licences for seabed mineral exploration in international waters.
3. 'Rare earth minerals' are present on seafloor in international waters.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only**
- (c) 1 and 3 only
- (d) 1, 2 and 3

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**Answer: (b)**

Licences for seabed exploration in areas beyond national jurisdiction are issued by the International Seabed Authority, not by the (now-defunct) Global Ocean Commission, so statement 1 is wrong. India has obtained ISA 'pioneer investor' licences for polymetallic-nodule exploration in the Central Indian Ocean Basin, making statement 2 correct. These nodules contain manganese, copper, cobalt and several rare-earth elements, so statement 3 is also correct. Hence only 2 and 3 are correct. ([superkalam.com](https://superkalam.com/upsc-prelims/previous-year-question-paper/2021/consider-the-following-statements-the-global-ocean-commission-grants-licences-for-seabed-exploration-and-mining-in-inter-0175034d-c61c-467c-af68-b0bcb34c0f27?utm\_source=openai))

**Q59. In the context of India's preparation for Climate-Smart Agriculture, consider the following statements:**

1. The 'Climate-Smart Village' approach in India is a part of a project led by the Climate Change, Agriculture and Food Security (CCAFS), an international research programme.
2. The project of CCAFS is carried out under Consultative Group on International Agricultural Research (CGIAR) headquartered in France.
3. The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India is one of the CGIAR's research centres.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3**

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**Answer: (d)**

The 'Climate-Smart Village' concept is run under the CGIAR Research Programme on Climate Change, Agriculture and Food Security (CCAFS), confirming statement 1. CCAFS is one of the global research programmes coordinated by CGIAR, whose system office is in Montpellier, France—so statement 2 is correct. ICRISAT (head-quartered near Hyderabad) is listed by CGIAR as one of its 15 research centres, validating statement 3. Hence all three statements are correct. ([dalvoy.com](https://www.dalvoy.com/upsc/previous-years/2021/climate-smart-agriculture-india-ccafs-cgiar-icrisat-village?utm\_source=openai))

**Q60. "Leaf litter decomposes faster than in any other biome and as a result the soil surface is often almost bare. Apart from trees, the vegetation is largely composed of plant forms that reach up into the canopy vicariously, by climbing the trees or growing as epiphytes, rooted on the upper branches of trees." This is the most likely description of**

- (a) coniferous forest
- (b) dry deciduous forest
- (c) mangrove forest
- (d) tropical rain forest**

**Answer: (d)**

Year-round high temperature and humidity in tropical rain forests accelerate microbial activity, so leaf litter decomposes very quickly and nutrients are recycled before a humus layer can form; the biome is also noted for its abundance of climbers (lianas) and epiphytes that root on tree trunks and branches. Such conditions are not found in coniferous, dry-deciduous or mangrove forests, hence option (d) 'tropical rain forest' is the only match. ([dalvoy.com](https://www.dalvoy.com/upsc/previous-years/2021/tropical-rain-forest-leaf-litter-decomposition-epiphytes-bare-soil?utm\_source=openai))

**Q61. 85 > ( > @ 5 ( 8 M \* \$ ? . G + H 2 G 9 A K G 5 C M 7 K G 8 > % > 8 G . H & > ( 9 K K 5 C M 7 ( 9 @ 9 K \$ G 9 H d 8 G M 7 G \$ M 0 . G 5 ( 5 ? > 8 8 > . > ( M / \$ / > > ' ? 8 / K ( G & M 5 > 0 > ( ? / \$ M 0 ? \$ 9 K \$ > 9 H d 8 @ \* 0 ? 8 M % ? \$ ? / K ( ? . M ( 2 ? ? \$ . G 8**

1. 5 ? 2 5 0 M \$ @ \* M 0 > # @ 0 & @ .

2. M ( ?

3. 0 ( G 5 > 2 G 6 > - M 7 @ \* M 0 > # @ ( 9 0 M , ? 5 K 0 M 8 )

4. . L 8 . @ 5 0 M 7 >

5. . C & > G A #

( @ G & ? B > \* M 0 / K 0 8 9 @ \$ M \$ 0 A ( G :

- (a) 1 0 2
- (b) 4 0 5
- (c) 2, 3 0 4**
- (d) 1, 3 0 5

**Answer: (c)**

Open savannas remain grass-dominated because (i) frequent natural fires scorch tree saplings, (ii) large grazing herbivores browse young shoots, and (iii) the strongly seasonal rainfall regime imposes a long dry season that stresses woody vegetation. Burrowing animals/termites and soil properties can influence local patches but are not the primary, ubiquitous checks on forest growth, so the correct combination is 2 + 3 + 4 ! option (c). ([edurev.in](https://edurev.in/t/330261/UPSC-Prelims-Previous-Year-Questions?utm\_source=openai))

Q63. (? .M(2? ?\$ %(K \*0 5? >0 @ ? :

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2. 8 @ +2?/> 5 \*\$M\$?/> & M7?# ->0\$ > \*>0 \*0? -K ( 9H d

3. ->0\$ 8B G 0 0M'-6A7M M7G\$M0K .G .K0? > G ,@ (?0M/>\$ 0\$> 9H

4. .K0? > @ \*\$M\$?/> M \*K7 \$\$M5 5>2@ .>(@ >\$@ 9H d

5. .K0? > 0 8 @ !<K > \*/K H5 '( G \$M\*>&( .G ?/> > 8 \$> 9Hd  
\*0K M\$ %(K .G 8G L(-8G 89@ 9H ?

(a) 1, 2, 4 0 5

(b) 3, 4 0 5

(c) 1, 3 0 4

(d) 1, 2, 3 0 5

**Answer: (b)**

1 is wrong because *Moringa oleifera* belongs to the family Moringaceae (not Leguminosae) and is a small deciduous tree, not evergreen. 2 is wrong because *Tamarindus indica* is native to tropical Africa, not endemic to South Asia. 3 is correct – tamarind pods are collected as Minor Forest Produce under the MSP-MFP scheme. 4 is correct – India exports both tamarind and moringa seeds. 5 is correct – the high-oleic oil in moringa and tamarind seeds is a proven biodiesel feedstock. Thus only 3, 4 and 5 are correct! option (b).

([britannica.com](https://www.britannica.com/plant/horseradish-tree?utm\_source=openai))

Q74. Bisphenol A (BPA), a cause of concern, is a structural/key component in the manufacture of which of the following kinds of plastics?

(a) Low-density polyethylene

(b) Polycarbonate

(c) Polyethylene terephthalate

(d) Polyvinyl chloride

**Answer: (b)**

Bisphenol A is primarily used as a monomer to produce polycarbonate plastics and epoxy resins; it is not a component of LDPE, PET, or PVC. Therefore option (b) Polycarbonate is correct

([en.wikipedia.org](https://en.wikipedia.org/wiki/Bisphenol\_A?utm\_source=openai)).

Q84. 0>7M M0@/ 8M\$0 \*0, (A8B ?\$ ( >\$? 0 \*>0 \*0? 5( (?5>8?/K (5( '?  
2006 G \*M0->5@ >0M/>(M5/( K 8A(?6M ?\$ 0(G G 2? , L(-8> . \$M0>2/ (

(a) \*0M/>50#, 5( 0 25>/A \*0?50M\$( . \$M0>2/

(b) \* >/@\$ 0> . \$M0>2/

(c) M0>.@# 5? >8 . \$M0>2/

(d) ( >\$@/ >0M/ . \$M0>2/

**Answer: (d)**

Section 11 of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 designates “the Ministry of the Central Government dealing with Tribal Affairs” as the nodal agency for implementing the Act. Hence the correct option is (d) Ministry of Tribal Affairs.

([pib.gov.in](https://www.pib.gov.in/PressReleaseDetailm.aspx?PRID=1579750&utm\_source=openai))

**Q97. Consider the following statements:**

**Statement 1:**

The United Nations Capital Development Fund (UNCDF) and the Arbor Day Foundation have recently recognized Hyderabad as 2020 Tree City of the World.

**Statement 2:**

Hyderabad was selected for the recognition for a year following its commitment to grow and maintain the urban forests.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement 1 and Statement 2 are correct and Statement 2 is the correct explanation for Statement 1
- (b) Both Statement 1 and Statement 2 are correct but Statement 2 is not the correct explanation for Statement 1
- (c) Statement 1 is correct but Statement 2 is not correct
- (d) Statement 1 is not correct but Statement 2 is correct**

**Answer: (d)**

The 'Tree Cities of the World' recognition is jointly given by FAO and the Arbor Day Foundation, not by the UN Capital Development Fund; hence Statement 1 is incorrect. Hyderabad earned the 2020 recognition for its commitment to expand and maintain urban forest cover under Telangana's Haritha Haram programme, so Statement 2 is correct. Thus, option (d) (1 incorrect, 2 correct) is right. ([fao.org](https://www.fao.org/newsroom/detail/The-Arbor-Day-Foundation-and-the-Food-and-Agriculture-Organization-of-the-United-Nations-%28FAO%29-recognise-120-Tree-Cities-of-the-World/en?utm\_source=openai))

— 2020 —

**Q48. (? .M (2? ?\$ .G 8G L (-8G >0#/ >0 ,G @ ( \*M0&B7# \$M\*(M( 0\$G 9H**

**1. 8M5 2? ?\$ 5>9( ( automobile) &M5>0> (?7M >8? \$ \* &>0M%**

**2. \$.M, > B > 'A**

**3. 2 !<@ > 2(>**

**4. 0 (G ? 58M\$MOK G +?(?6? .G \*/K**

**5. \*12@8M > 0@( 8G (?0M.? \$ \$M\*>&K > \*/K**

**( @ G &? B > \*M0/K 0 89@ \$M\$0 A(? :**

- (a) G 5 2 1, 2 0 3
- (b) G 5 2 2 0 4
- (c) G 5 2 1, 3 0 4
- (d) 1, 2, 3, 4 0 5**

**Answer: (d)**

Benzene can be released from automobile exhaust, tobacco smoke, wood combustion, off-gassing of varnished furniture and burning/usage of polyurethane-based products; all five listed factors are established indoor/outdoor sources, so every statement is correct. ([insightsonindia.com](https://www.insightsonindia.com/2020/10/10/final-key-with-detailed-solutions-upsc-civil-services-preliminary-exam-2020/))

**Q72. With reference to Indian elephants, consider the following statements :**

1. The leader of an elephant group is a female.
2. The maximum gestation period can be 22 months.
3. An elephant can normally go on calving till the age of 40 years only.
4. Among the States in India, the highest elephant population is in Kerala.

**Which of the statements given above is/are correct ?**

**(a) 1 and 2 only**

(b) 2 and 4 only

(c) 3 only

(d) 1, 3 and 4 only

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**Answer: (a)**

Asian/Indian elephant herds are matriarchal, led by the oldest female, validating statement 1. Their gestation lasts the longest among land mammals—about 22 months—so statement 2 is also correct. Cows can calve well past 40 years (records show births at ~50 years), so statement 3 is incorrect. Karnataka, not Kerala, hosts India's largest elephant population, so statement 4 is wrong; thus only 1 and 2 are correct. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2020-question-72/?utm\_source=openai))

**Q73. Which of the following Protected Areas are located in Cauvery basin ?**

1. Nagarhole National Park
2. Papikonda National Park
3. Sathyamangalam Tiger Reserve
4. Wayanad Wildlife Sanctuary

**Select the correct answer using the code given below :**

(a) 1 and 2 only

(b) 3 and 4 only

**(c) 1, 3 and 4 only**

(d) 1, 2, 3 and 4

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**Answer: (c)**

Nagarhole NP (through which the Kabini, a Cauvery tributary, flows), Sathyamangalam Tiger Reserve (flanked by Cauvery tributaries Bhavani & Moyar) and Wayanad WLS (also on the Kabini) all lie within the Cauvery river basin. Papikonda NP is in the Godavari basin, so item 2 is excluded. Therefore 1, 3 and 4 only are correct. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2020-question-73/?utm\_source=openai))

UPSC 2020

Environment &amp; Ecology › Biodiversity &amp; Conservation

easy

Q74. ->0\$ @ H5-5?5?'\$> G 8 &0M- .G , 8@ K(>+M0G.(M , I(M+0G(@/. 5> M/> 9H ?

- (a) \* M7 @  
 (b) \* M0 >\$?  
 (c) 8 M\$(\*>/@  
 (d) \* 8 . B9

**Answer: (a)**

Ceylon frogmouth, Coppersmith barbet, Grey-chinned minivet and White-throated redstart are all distinct species of birds; none are primates, reptiles or amphibians. Thus option (a) 'Birds' is the only correct classification.

([educemy.com](https://educemy.com/blog/upsc-prelims-2020-question-74/?utm\_source=openai))

UPSC 2020

Environment &amp; Ecology › Protected Areas &amp; Wildlife

moderate

Q75. ->0\$@/ 6M5 '> (Withania) @ 8 \* >\$?, K \*%0@2@ -B.? \*0 +2\$@ -+ G 8 0 M7# G 2? (? .M(2? ?\$ .G 8G L(-8> 8 0 M7?\$ M7G\$M0 ?\$ 9H ?

- (a) >(M9> 0>7M M0@/ &M/>(   
 (b) .>(8 0>7M M0@/ &M/>(   
 (c) .A&A .2> 5(M/ @5 -/>0#M/   
 (d) \$2 \*M\*0 5(M/ @5 -/>0#M/

**Answer: (a)**

Kanha National Park in Madhya Pradesh hosts the only surviving "hard-ground" subspecies of the Indian swamp deer (Barasingha), which thrives on firm, rocky grasslands and feeds exclusively on grasses. Manas (Assam), Mudumalai (Tamil Nadu) and Tal Chhapar (Rajasthan) are famous for other flagship species but not for this Barasingha subspecies.

([educemy.com](https://educemy.com/blog/upsc-prelims-2020-question-75/))

UPSC 2020

Environment &amp; Ecology › Renewable Energy &amp; Green Technologies

moderate

Q76. 8M\*>\$ 8M2H (? .M(2? ?\$ .G 8G ?8 G 2? 8>. M0@ 9K 8 \$> 9H ?  
 1. '>0-8!< G (?0M.># G 2?  
 2. C7? -B.? G 8A'>0 G 2?  
 3. 8@.G G \$M\*>&( G 2?  
 (@ G &? B > \*M0/K 0 89@ \$M\$0 A(? :

- (a) G52 1 0 2  
 (b) G52 2 0 3  
 (c) G52 1 0 3  
 (d) 1, 2 0 3

**Answer: (d)**

Steel-making slag is reused as (1) aggregate for road-base layers, (2) a liming/silicate fertiliser that improves acidic agricultural soils, and (3) a supplementary cementitious material or aggregate in cement/concrete manufacture; hence all three listed uses are valid.

([educemy.com](https://educemy.com/blog/upsc-prelims-2020-question-76/?utm\_source=openai))

Q77. Himalayan musk deer occur naturally in the high-altitude forests/alpine scrub of Uttarakhand, making Askot Wildlife Sanctuary and Gangotri National Park their typical habitats. Kishanpur WLS (Terai U.P.) and Manas NP (Assam plains) lie outside the deer's ecological range, so only statements 1 and 2 are correct. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2020-question-77/?utm\_source=openai))

- (a) 5 2 1 0 2  
 (b) 5 2 2 0 3  
 (c) 5 2 3 0 4  
 (d) 5 2 1 0 4

### Answer: (a)

Himalayan musk deer occur naturally in the high-altitude forests/alpine scrub of Uttarakhand, making Askot Wildlife Sanctuary and Gangotri National Park their typical habitats. Kishanpur WLS (Terai U.P.) and Manas NP (Assam plains) lie outside the deer's ecological range, so only statements 1 and 2 are correct. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2020-question-77/?utm\_source=openai))

Q78. Environment-friendly rural roads prioritise: 1) copper-slag, an industrial by-product that replaces natural aggregates; 2) cold-mix asphalt, produced without high-temperature heating, cutting fuel use and emissions; and 3) geotextiles that reinforce soil and reduce raw-material demand. Hot-mix asphalt and Portland cement are more carbon-intensive, so they are not preferred. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/in-rural-road-construction-the-use-of-which-of-the-following-is-preferred-for-ensuring-environmental-sustainability-or-to-reduce-carbon-footprint/?utm\_source=openai))

- (a) 5 2 1, 2 0 3  
 (b) 5 2 2, 3 0 4  
 (c) 5 2 4 0 5  
 (d) 5 2 1 0 5

### Answer: (a)

Environment-friendly rural roads prioritise: 1) copper-slag, an industrial by-product that replaces natural aggregates; 2) cold-mix asphalt, produced without high-temperature heating, cutting fuel use and emissions; and 3) geotextiles that reinforce soil and reduce raw-material demand. Hot-mix asphalt and Portland cement are more carbon-intensive, so they are not preferred. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/in-rural-road-construction-the-use-of-which-of-the-following-is-preferred-for-ensuring-environmental-sustainability-or-to-reduce-carbon-footprint/?utm\_source=openai))

**Q79. Consider the following statements:**

1. Coal ash contains arsenic, lead and mercury.
2. Coal-fired power plants release sulphur dioxide and oxides of nitrogen into the environment.
3. High ash content is observed in Indian coal.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3**

**Answer: (d)**

Coal ash (CCR) is known to contain toxic trace metals such as arsenic, lead and mercury; coal-fired plants routinely emit sulphur dioxide and nitrogen oxides during combustion; and Indian coal, formed by drift deposits, typically has high ash content ("H25–45 %). Therefore all three statements are correct. ([vedantu.com](https://vedantu.com/upsc-exam/consider-the-following-statements-76/?utm\_source=openai))

**Q80. What is the use of biochar in farming?**

1. Biochar can be used as a part of the growing medium in vertical farming.
2. When biochar is a part of the growing medium, it promotes the growth of nitrogen-fixing microorganisms.
3. When biochar is a part of the growing medium, it enables the growing medium to retain water for longer time.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 1, 2 and 3**

**Answer: (d)**

Biochar, a porous carbon-rich solid, is now used in soilless substrates for vertical farming; its high surface area improves habitat for nitrogen-fixing microbes and its porosity increases the medium's water-holding capacity. Hence all three listed benefits are valid, making option (d) correct.

([studycart24.com](https://studycart24.com/blog/upsc-prelims-2020-question-80/?utm\_source=openai))

**Q81. If a particular plant species is placed under Schedule VI of The Wildlife Protection Act, 1972, what is the implication?**

- (a) A licence is required to cultivate that plant.**
- (b) Such a plant cannot be cultivated under any circumstances.
- (c) It is a Genetically Modified crop plant.
- (d) Such a plant is invasive and harmful to the ecosystem.

**Answer: (a)**

Section 17C of the Wild Life (Protection) Act stipulates that no person may cultivate a plant listed in Schedule VI except under, and in accordance with, a licence issued by the Chief Wildlife Warden. Thus the implication is that a licence is required; outright prohibition, GM status or invasive nature are not specified consequences. ([edurev.in](https://edurev.in/t/330288/UPSC-Prelims-Previous-Year-Questions-2020-Environment?utm\_source=openai))

**Q83. What is/are the advantage/advantages of zero tillage in agriculture?**

1. Sowing of wheat is possible without burning the residue of previous crop.
2. Without the need for nursery of rice saplings, direct planting of paddy seeds in the wet soil is possible.
3. Carbon sequestration in the soil is possible.

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3**

---

**Answer: (d)**

Zero-till techniques let farmers drill wheat seed directly into rice stubble, enable direct seeded rice without a nursery, and, by leaving residues undisturbed, lock additional organic carbon in soil—enhancing carbon sequestration. All three statements are therefore correct. ([jagranjosh.com](https://www.jagranjosh.com/articles/upsc-ias-prelims-2020-detailed-analysis-of-paper-i-agriculture-polity-section-1602508132-1?utm\_source=openai))

**Q84. According to India's National Policy on Biofuels, which of the following can be used as raw material for the production of biofuels?**

1. Cassava
2. Damaged wheat grains
3. Groundnut seeds
4. Horse gram
5. Rotten potatoes
6. Sugar beet

Select the correct answer using the code given below:

- (a) 1, 2, 5 and 6**
- (b) 1, 3, 4 and 6
- (c) 2, 3, 4 and 5
- (d) 1, 2, 3, 4, 5 and 6

---

**Answer: (a)**

The 2018 National Policy on Biofuels allows starch-rich crops (e.g., cassava), damaged or unfit food grains (e.g., damaged wheat, rotten potatoes) and sugar-rich crops (e.g., sugar beet) as feedstocks. Oil-seed pulses such as groundnut and horse gram are not listed. Hence only 1, 2, 5 and 6 qualify. ([dics.co](https://dics.co/blog-details/upsc-prelims-cse-2020-question-paper-with-answer-key?utm\_source=openai))

**Q85. Which one of the following statements best describes the term 'Social Cost of Carbon'? It is a measure, in monetary value, of the**

- (a) long-term damage done by a tonne of CO<sub>2</sub> emissions in a given year**
- (b) requirement of fossil fuels for a country to provide goods and services to its citizens
- (c) efforts made by Climate refugees to adapt to live in a new place
- (d) contribution of an individual person to the carbon footprint on the planet Earth

**Answer: (a)**

The Social Cost of Carbon (SCC) is officially defined as the monetary estimate of the long-term global damage caused by emitting one additional metric tonne of CO<sub>2</sub> in a given year; it converts climate-related losses (agriculture, health, property, energy, etc.) into present-value dollars. Therefore option (a) is correct. The other options misinterpret SCC: it is unrelated to a nation's fuel requirement (b), to expenditure by climate refugees (c), or to an individual's personal footprint (d). ([19january2017snapshot.epa.gov](https://19january2017snapshot.epa.gov/climatechange/social-cost-carbon?utm\_source=openai))

**Q90. In the context of India, which of the following is/are considered to be practice(s) of eco-friendly agriculture?**

- 1. Crop diversification**
- 2. Legume intensification**
- 3. Tensiometer use**
- 4. Vertical farming**

**Select the correct answer using the code given below:**

- (a) 1, 2 and 3 only
- (b) 3 only
- (c) 4 only
- (d) 1, 2, 3 and 4**

**Answer: (d)**

All four listed practices reduce external chemical inputs or optimise resource-use: 1) crop diversification breaks pest cycles and improves soil health, 2) legume intensification fixes nitrogen biologically, 3) tensiometers allow precise irrigation scheduling saving water, and 4) vertical farming uses controlled-environment, stacked cultivation with lower land/ water footprint. Hence 1, 2, 3 and 4 are eco-friendly, making option (d) correct. ([educemy.com](https://educemy.com/blog/upsc-prelims-2020-question-90/?utm\_source=openai))

**Q91. What are the advantages of fertigation in agriculture?**

1. Controlling the alkalinity of irrigation water is possible.
2. Efficient application of Rock Phosphate and all other phosphatic fertilizers is possible.
3. Increased availability of nutrients to plants is possible.
4. Reduction in the leaching of chemical nutrients is possible.

Select the correct answer using the code given below:

- (a) 1, 2 and 3 only  
 (b) 1, 2 and 4 only  
 (c) 1, 3 and 4 only  
 (d) 2, 3 and 4 only

**Answer: (c)**

Through fertigation the acidity/alkalinity (pH) of irrigation water can be adjusted (1), nutrients are delivered directly to the root zone increasing their availability (3) and the precise, small-dose application cuts nutrient leaching losses (4). Rock phosphate is almost insoluble and cannot be efficiently injected through drip lines, so statement 2 is wrong. Therefore, statements 1, 3 and 4 only! option (c). ([sprintupsc.com/PreviousYearsWeb/upsc-prelims-2020-answer-key.html?utm\_source=openai])

**Q95. The Desert National Park extends across two Rajasthan districts—about 1,900 km<sup>2</sup> in Jaisalmer and 1,262 km<sup>2</sup> in Barmer—so Statement 1 is correct. Several revenue villages and human settlements lie inside the park, so Statement 2 is incorrect. The park is one of the last natural habitats of the critically-endangered Great Indian Bustard, so Statement 3 is correct. Hence only Statements 1 and 3 are true. ([roundglassustain.com](https://roundglassustain.com/travel/desert-national-park-guide?utm\_source=openai))**

1. The Desert National Park extends across two Rajasthan districts—about 1,900 km<sup>2</sup> in Jaisalmer and 1,262 km<sup>2</sup> in Barmer—so Statement 1 is correct.
  2. Several revenue villages and human settlements lie inside the park, so Statement 2 is incorrect.
  3. The park is one of the last natural habitats of the critically-endangered Great Indian Bustard, so Statement 3 is correct.
- Hence only Statements 1 and 3 are true.

- (a) 1, 2 and 3  
 (b) 1, 2 and 3  
 (c) 1 and 3  
 (d) 1, 2 and 3

**Answer: (c)**

The Desert National Park extends across two Rajasthan districts—about 1,900 km<sup>2</sup> in Jaisalmer and 1,262 km<sup>2</sup> in Barmer—so Statement 1 is correct. Several revenue villages and human settlements lie inside the park, so Statement 2 is incorrect. The park is one of the last natural habitats of the critically-endangered Great Indian Bustard, so Statement 3 is correct. Hence only Statements 1 and 3 are true. ([roundglassustain.com](https://roundglassustain.com/travel/desert-national-park-guide?utm\_source=openai))

**Q98. Consider the following statements:**

1. 36% of India's districts are classified as "overexploited" or "critical" by the Central Ground Water Authority (CGWA).
  2. CGWA was formed under the Environment (Protection) Act.
  3. India has the largest area under groundwater irrigation in the world.
- Which of the statements given above is/are correct?

- (a) 1 only  
**(b) 2 and 3 only**  
 (c) 2 only  
 (d) 1 and 3 only

**Answer: (b)**

CGWA data show that roughly 17-20 % of assessment units are over-exploited or critical—far below 36 % of districts—so Statement 1 is wrong. The Central Ground Water Authority was constituted under Section 3(3) of the Environment (Protection) Act 1986, so Statement 2 is correct. FAO figures indicate India has the world's largest area (~39 million ha) irrigated with groundwater, so Statement 3 is correct. Therefore only Statements 2 and 3 are correct. ([drishtias.com](https://www.drishtias.com/current-affairs-news-analysis-editorials/news-analysis/10-11-2022?utm\_source=openai))

**Q100. Among the following Tiger Reserves, which one has the largest area under "Critical Tiger Habitat"?**

- (a) Corbett  
 (b) Ranthambore  
**(c) Nagarjunsagar-Srisaillam**  
 (d) Sunderbans

**Answer: (c)**

Nagarjunsagar–Srisaillam Tiger Reserve has the largest notified Core/Critical Tiger Habitat in the country at about 2,444 km<sup>2</sup>, far exceeding Corbett (~821 km<sup>2</sup>), Ranthambore (~1,113 km<sup>2</sup>) and Sundarbans (~1,700 km<sup>2</sup>). Hence option (c) is correct while the others are smaller. ([mee-tr.wii.gov.in](https://mee-tr.wii.gov.in/Home/Geospatial/nagarjunasagar-srisaillam-tiger-reserve?utm\_source=openai))

— 2019 —

**Q 18. (? .M(2? ?\$ .G 8G L(-8> (G6(2 \*>0M \*B0M5@ 9? .>2/ 6@\$K7M# 2M\* >**

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 (b) (>.&>+> (G6(2 \*>0M  
 (c) (G 0> > @ (G6(2 \*>0M  
**(d) +B2K @ > @ (G6(2 \*>0M**

**Answer: (d)**

Valley of Flowers NP (Uttarakhand) lies entirely between 3,352 m and 3,658 m and is recognised as being 'completely in the temperate alpine zone' ([en.wikipedia.org](https://en.wikipedia.org/wiki/Valley\_of\_Flowers\_National\_Park?utm\_source=openai)). Manas, Namdapha and Neora Valley span lower elevations that include tropical/sub-tropical belts, so they are not wholly alpine. Hence option (d) is correct.

**Q22. Consider the following statements:**

1. Asiatic lion is naturally found in India only.
2. Double-humped camel is naturally found in India only.
3. One-horned rhinoceros is naturally found in India only.

Which of the statements given above is/are correct?

- (a) 1 only  
(b) 2 only  
(c) 1 and 3 only  
(d) 1, 2 and 3

**Answer: (a)**

The Asiatic lion's last wild population survives solely in India's Gir landscape, making it naturally found only in India. The double-humped (Bactrian) camel occurs across the cold deserts of Mongolia and China as well as Ladakh, and the greater one-horned rhinoceros ranges in both India and Nepal; therefore statements 2 and 3 are incorrect. ([dalvoy.com](https://www.dalvoy.com/upsc/previous-years/2019/indian-fauna-asiatic-lion-double-humped-camel-one-horned-rhino-upsc?utm\_source=openai))

**Q25. In the context of which of the following do some scientists suggest the use of cirrus cloud thinning technique and the injection of sulphate aerosol into stratosphere?**

- (a) Creating the artificial rains in some regions  
(b) Reducing the frequency and intensity of tropical cyclones  
(c) Reducing the adverse effects of solar wind on the Earth  
(d) Reducing the global warming

**Answer: (d)**

Both cirrus-cloud thinning and stratospheric sulphate aerosol injection are proposed solar-radiation-management geoengineering methods aimed at reflecting more incoming sunlight or allowing more heat to escape, thereby lowering the Earth's radiative forcing and counteracting global warming; they are not used for rainfall enhancement, cyclone suppression or shielding from solar wind. ([jagranjosh.com](https://www.jagranjosh.com/articles/upsc-ias-prelims-2019-gs-question-paper-1-and-answer-key-1559456035-1))

**Q26. In the context of which one of the following are the terms 'pyrolysis' and 'plasma gasification' mentioned?**

- (a) Extraction of rare earth elements  
(b) Natural gas extraction technologies  
(c) Hydrogen fuel-based automobiles  
(d) Waste-to-energy technologies

**Answer: (d)**

Pyrolysis (thermal decomposition of waste in the absence of oxygen) and plasma gasification (using an electric arc to convert waste into syngas and slag) are both advanced waste-to-energy processes that generate combustible gases for power rather than methods for rare-earth or natural-gas extraction or for running hydrogen vehicles. ([jagranjosh.com](https://www.jagranjosh.com/articles/upsc-ias-prelims-2019-gs-question-paper-1-and-answer-key-1559456035-1))

**Q27. Which of the following are in Agasthyamalai Biosphere Reserve?**

- (a) Neyyar, Peppara and Shendurney Wildlife Sanctuaries; and Kalakad Mundanthurai Tiger Reserve  
 (b) Mudumalai, Sathyamangalam and Wayanad Wildlife Sanctuaries; and Silent Valley National Park  
 (c) Koundinya, Gundla Brahmeswaram and Papikonda Wildlife Sanctuaries; and Mudumalai National Park  
 (d) Kawal and Sri Venkateswara Wildlife Sanctuaries; and Nagarjunsagar-Srisailem Tiger Reserve

**Answer: (a)**

The Agasthyamalai Biosphere Reserve (Kerala–Tamil Nadu) encompasses Neyyar, Peppara and Shendurney Wildlife Sanctuaries along with the Kalakad-Mundanthurai Tiger Reserve; the other sanctuary clusters listed lie outside this reserve. ([jagranjosh.com](https://www.jagranjosh.com/articles/upsc-ias-prelims-2019-gs-question-paper-1-and-answer-key-1559456035-1))

**Q 28. (? . M ( 2 ? ? \$ % ( K \* 0 5 ? > 0 @ ? :**

1. A @ A > \$ ? / > 6 > - M 7 @ 9 K \$ @ 9 H d  
 2. . 2 ? / K @ A > \$ ? / > . > 8 - M 7 @ 9 K \$ @ 9 H d  
 3. A @ A > \$ ? / > 8 0 M 5 - M 7 @ 9 K \$ @ 9 H d  
 4. 8 > \* K @ A > \$ ? / > 8 0 M 5 - M 7 @ 9 K \$ @ 9 H d  
 \* / A M \$ . G 8 G L ( - 8 G % ( 8 9 @ 9 H ?

- (a) G 5 2 1 0 3  
 (b) G 5 2 2 , 3 0 4  
 (c) G 5 2 2 0 4  
 (d) 1 , 2 , 3 0 4

**Answer: (d)**

Examples exist for each statement: adult Green Sea Turtle is herbivorous; many fish such as parrotfish are herbivores; dugongs/manatees are herbivorous marine mammals; several snake lineages (e.g., boas, pit vipers) are viviparous, giving birth to live young. Hence all four statements are correct. ([jagranjosh.com](https://www.jagranjosh.com/articles/upsc-ias-prelims-2019-gs-question-paper-1-and-answer-key-1559456035-1))

**Q29. Consider the following pairs:**

**Wildlife — Naturally found in**

1. Blue-finned Mahseer — Cauvery River
2. Irrawaddy Dolphin — Chambal River
3. Rusty-spotted Cat — Eastern Ghats

**Which of the pairs given above are correctly matched?**

- (a) 1 and 2 only  
 (b) 1 and 3 only  
 (c) 2 and 3 only  
 (d) 1, 2 and 3

**Answer: (b)**

Blue-finned Mahseer (Tor khudree) is endemic to the Cauvery river system, and Rusty-spotted Cat occurs naturally in the dry forests of the Eastern Ghats, so pairs 1 and 3 are correct. Irrawaddy Dolphins are found in coastal waters, Chilika Lake and the Mekong/Ayeyarwady/Mahakam rivers, not in the Chambal; therefore pair 2 is incorrect.

([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/consider-the-following-pairs-17/))

UPSC 2019

Environment &amp; Ecology › Pollution &amp; Waste Management

easy

**Q30.** Micro-beads are small plastic particles that are commonly found in personal care products. They are not biodegradable and can persist in the environment for a long time. They are often found in water bodies and can be ingested by marine life. Which of the following statements are correct about the deposits of 'methane hydrate'?

(a) Micro-beads are microscopic, non-biodegradable plastic particles used in personal-care products.

(b) Waste-water treatment plants cannot filter them, so they accumulate in rivers and oceans where they are ingested by fish and other fauna, damaging entire marine food-webs. They are not linked to cancer in children, absorption by crop plants, or use as food sweeteners, hence options (b), (c) and (d) are incorrect.

(c) Micro-beads are not linked to cancer in children, absorption by crop plants, or use as food sweeteners, hence options (b), (c) and (d) are incorrect.

(d) Micro-beads are not linked to cancer in children, absorption by crop plants, or use as food sweeteners, hence options (b), (c) and (d) are incorrect.

**Answer: (a)**

Micro-beads are microscopic, non-biodegradable plastic particles used in personal-care products. Waste-water treatment plants cannot filter them, so they accumulate in rivers and oceans where they are ingested by fish and other fauna, damaging entire marine food-webs. They are not linked to cancer in children, absorption by crop plants, or use as food sweeteners, hence options (b), (c) and (d) are incorrect. ([drishtiias.com](https://www.drishtiias.com/prelims-analysis/2019-prelims-analysis))

UPSC 2019

Environment &amp; Ecology › Biodiversity &amp; Conservation

easy

**Q31.** Recently, there was a growing awareness in our country about the importance of Himalayan nettle (*Girardinia diversifolia*) because it is found to be a sustainable source of

- (a) anti-malarial drug
- (b) biodiesel
- (c) pulp for paper industry
- (d) textile fibre**

**Answer: (d)**

*Girardinia diversifolia* (Himalayan nettle) yields a strong, long staple bast fibre that can be spun into eco-friendly yarn; recent government projects promote it as a sustainable textile source. It is neither used for anti-malarial drugs, biodiesel, nor paper-pulp, so options (a), (b) and (c) are wrong. ([drishtiias.com](https://www.drishtiias.com/prelims-analysis/2019-prelims-analysis))

UPSC 2019

Environment &amp; Ecology › Climate Change &amp; Greenhouse Gases

moderate

**Q34.** Which of the following statements are correct about the deposits of 'methane hydrate'?

1. Global warming might trigger the release of methane gas from these deposits.
2. Large deposits of 'methane hydrate' are found in Arctic Tundra and under the seafloor.
3. Methane in atmosphere oxidizes to carbon dioxide after a decade or two.

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3**

**Answer: (d)**

1) Warming seas or permafrost thaw can destabilise methane hydrate ('fire-ice') and release methane, a potent greenhouse gas. 2) Vast reserves occur beneath Arctic tundra and continental-slope sediments under the seafloor. 3) Atmospheric methane oxidises to CO<sub>2</sub> within about 10 years, so it is short-lived relative to CO<sub>2</sub>. Hence all three statements are correct. ([drishtiias.com](https://www.drishtiias.com/prelims-analysis/2019-prelims-analysis))

**Q35. Consider the following:**

1. Carbon monoxide
2. Methane
3. Ozone
4. Sulphur dioxide

Which of the above are released into atmosphere due to the burning of crop/biomass residue?

- (a) 1 and 2 only  
 (b) 2, 3 and 4 only  
 (c) 1 and 4 only  
 (d) 1, 2, 3 and 4

**Answer: (d)**

Incomplete combustion of crop/biomass residue releases a cocktail of gases that includes carbon monoxide (CO), methane (CH<sub>4</sub>), precursor species that quickly photochemically generate ground-level ozone (therefore O<sub>3</sub> is considered among the emitted pollutants), and trace amounts of sulphur dioxide from residual sulphur in the plant matter. Hence all four listed gases can be associated with stubble-burning emissions, making option (d) correct.

([educemy.com](https://educemy.com/blog/upsc-prelims-2019-question-35/?utm\_source=openai))

**Q40. (? .M(2? ?\$ %(K \*0 5? >0 @ ? :**

1. 0>.80 8.M.G2( G (A8>0, ->0\$ G 0> M/ M7G\$M0 .G 8-@ 59 -B.? K ,>"<80 >0 G 2? '?&G6>\$M. 9Hd
2. 0M&M0 -B.? (8 0 M7# 0 \*M0, '() (?/., 2010, ->0\$ 80 >0 (G 0>.80 8.M.G2 ,(> 9H d
3. 0M&M0 -B.? (8 0 M7# 0 \*M0, '() (?/., 2010, 0M&M0 -B.? G 56?7M M \$>2? C\$ 0\$G 9H , 8> ? '? >0 &M5>0> (?0M'>0?\$ ?/> /> 9Hd  
 \*/A M\$ .G 8G L(-8>/8G %( 89@ 9H/9H ?

- (a) G 5 2 1 0 2  
 (b) G 5 2 2 0 3  
 (c) G 5 2 3  
 (d) 1, 2 0 3

**Answer: (c)**

The Ramsar Convention requires protection only of sites a country designates as Ramsar wetlands, not every flooded land within its territory, so statement 1 is wrong. The Wetlands (Conservation and Management) Rules, 2010 were issued under the Environment (Protection) Act, 1986; they are not framed \*on the recommendation\* of Ramsar, hence statement 2 is incorrect. The Rules explicitly include the drainage/catchment area 'as determined by the authority' within the definition of a wetland, making statement 3 correct. Therefore, only statement 3 is true.

([educemy.com](https://educemy.com/blog/upsc-prelims-2019-question-40/?utm\_source=openai))

**Q41. Consider the following statements :**

1. Agricultural soils release nitrogen oxides into environment.
2. Cattle release ammonia into environment.
3. Poultry industry releases reactive nitrogen compounds into environment.

Which of the statements given above is/are correct?

- (a) 1 and 3 only  
 (b) 2 and 3 only  
 (c) 2 only  
 (d) 1, 2 and 3

**Answer: (d)**

Soils treated with nitrogen fertilisers undergo nitrification/denitrification that emits NO<sub>x</sub> nitrogen oxides; cattle urine and dung volatilise large amounts of ammonia; and poultry litter releases ammonia and other reactive nitrogen compounds. Thus all three statements are correct.

([educemy.com](https://educemy.com/blog/upsc-prelims-2019-question-41/?utm\_source=openai))

**Q55. (? .M(2? ?\$ %(K \*0 5? >0 @ ? :**

1. ->0\$@/ 5( '?(?/., 1927 .G 9>2 .G 9A 8 6K'( G (A8>0, 5( (?5>8?/K I 5>2G ,> 8 K > (G > '? >0 9Hd
2. (A8B ?\$ ( >\$? 5 (M/ \*>0 \*0? 5(5>8@ (5( '? >0K @ .>(M/\$>) '?(?/ L# 5( \$M\*>& 9Hd
3. (A8B ?\$ ( >\$?/K 5 (M/ \*>0 \*0? 5(5>8?/K (5( '? >0K @ .>(M/\$>) (?5>8?/K K 5( -B.? > 8M5>.\$M5 '? >0 -@ \*M0&>( 0\$> 9Hd

\*0K M\$ .G 8G L(-8>/8G %( 89@ 9H/9H ?

- (a) G52 1 0 2  
 (b) G52 2 0 3  
 (c) G52 3  
 (d) 1, 2 0 3

**Answer: (b)**

The 2017 amendment to the Indian Forest Act de-classifies bamboo as a tree only on NON-forest land; it does not give forest-dwellers an automatic right to cut bamboo inside reserved forests, so Statement 1 is incorrect. The Forest Rights Act 2006 expressly lists bamboo as a "minor forest produce" in §2(i), confirming Statement 2. Section 3(1)(a) of the same Act recognises individual tenure/ownership rights over forest land cultivated by eligible dwellers, making Statement 3 correct. Hence only 2 and 3 are correct. ([timesofindia.in diatimes.com](https://timesofindia.indiatimes.com/india/government-amends-forest-act-bamboo-no-longer-a-tree/articleshow/62274500.cms?utm\_source=openai))

**Q58. Consider the following statements:**

**The Environment Protection Act, 1986 empowers the Government of India to**

- 1. state the requirement of public participation in the process of environmental protection, and the procedure and manner in which it is sought**
  - 2. lay down the standards for emission or discharge of environmental pollutants from various sources**
- Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only**
- (c) Both 1 and 2
- (d) Neither 1 nor 2

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**Answer: (b)**

Section 3(2)(iv) of the Environment (Protection) Act empowers the Central Government to 'lay down standards for emission or discharge of environmental pollutants', validating Statement 2. The Act itself does not mandate procedures for public participation; public hearings arise from later EIA notifications, so Statement 1 is incorrect. Hence only Statement 2 is correct.

([icpe.in](https://www.icpe.in/docs/no29.htm?utm\_source=openai))

**Q59. As per the Solid Waste Management Rules, 2016 in India, which one of the following statements is correct?**

- (a) Waste generator has to segregate waste into five categories.
- (b) The Rules are applicable to notified urban local bodies, notified towns and all industrial townships only.
- (c) The Rules provide for exact and elaborate criteria for the identification of sites for landfills and waste processing facilities.**
- (d) It is mandatory on the part of waste generator that the waste generated in one district cannot be moved to another district.

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**Answer: (c)**

Schedule I of the SWM Rules 2016 prescribes detailed siting criteria for landfills—e.g., at least 100 m from rivers, 200 m from ponds/highways/habitations and 20 km from airports—thus option (c) is correct. The Rules require source segregation into three (not five) streams (wet, dry and domestic-hazardous), apply to rural areas, SEZs, airports, etc., and do not bar inter-district transport of waste, rendering options (a), (b) and (d) incorrect. ([legitquest.com](https://www.legitquest.com/act/solid-waste-management-rules-2016/9E9E?utm\_source=openai))

**Q68. Consider the following statements:**

1. As per law, the Compensatory Afforestation Fund Management and Planning Authority exists at both National and State levels.
  2. People's participation is mandatory in the compensatory afforestation programmes carried out under the Compensatory Afforestation Fund Act, 2016.
- Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

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**Answer: (a)**

The Compensatory Afforestation Fund Management and Planning Authority (CAMPA) is statutorily constituted at both the National and every State level (Statement 1 correct). The 2016 Act and its Rules do not make people's participation a mandatory legal requirement for compensatory afforestation projects (Statement 2 incorrect). Therefore only Statement 1 is correct. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/consider-the-following-statements-62/?utm\_source=openai))

**Q78. In India, 'extended producer responsibility' was introduced as an important feature in which of the following?**

- (a) The Bio-medical Waste (Management and Handling) Rules, 1998
- (b) The Recycled Plastic (Manufacturing and Usage) Rules, 1999
- (c) **The e-Waste (Management and Handling) Rules, 2011**
- (d) The Food Safety and Standard Regulations, 2011

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**Answer: (c)**

The concept of Extended Producer Responsibility (EPR) first became a statutory obligation in India under the e-Waste (Management and Handling) Rules, 2011, which require producers of electrical and electronic equipment to take back and channelise end-of-life products. Hence option (c) is correct. ([elaw.in](https://elaw.in/waste/ewaste.html?utm\_source=openai))

**Q2. Which of the following leaf modifications occur(s) in the desert areas to inhibit water loss?**

1. Hard and waxy leaves
2. Tiny leaves
3. Thorns instead of leaves

Select the correct answer using the code given below:

- (a) 2 and 3 only
- (b) 2 only
- (c) 3 only
- (d) 1, 2 and 3**

---

**Answer: (d)**

Xerophytic (desert) plants limit transpiration by having thick waxy cuticles, very small (or absent) leaves, and by modifying leaves into thorns; all three listed modifications occur, so statements 1, 2 and 3 are correct.

([[educemy.com](https://educemy.com/blog/upsc-prelims-2018-question-2/?utm_source=openai)]([https://educemy.com/blog/upsc-prelims-2018-question-2/?utm\\_source=openai](https://educemy.com/blog/upsc-prelims-2018-question-2/?utm_source=openai)))

**Q4. How is the National Green Tribunal (NGT) different from the Central Pollution Control Board (CPCB)?**

1. The NGT has been established by an Act whereas the CPCB has been created by an executive order of the Government.
2. The NGT provides environmental justice and helps reduce the burden of litigation in the higher courts whereas the CPCB promotes cleanliness of streams and wells, and aims to improve the quality of air in the country.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only**
- (c) Both 1 and 2
- (d) Neither 1 nor 2

---

**Answer: (b)**

The National Green Tribunal (NGT) is a statutory body created by the NGT Act, 2010, but the Central Pollution Control Board is also statutory, established under the Water (Prevention and Control of Pollution) Act, 1974—so Statement 1 is incorrect. Statement 2 is correct: the NGT adjudicates environmental disputes, easing higher-court burdens, whereas the CPCB's mandate is to monitor and control water and air pollution. Hence only Statement 2 is correct. ([[vajiramandravi.com](https://vajiramandravi.com/upsc-exam/how-is-the-national-green-tribunal-ngt-different-from-the-central-pollution-control-board-cpcb/?utm_source=openai)]([https://vajiramandravi.com/upsc-exam/how-is-the-national-green-tribunal-ngt-different-from-the-central-pollution-control-board-cpcb/?utm\\_source=openai](https://vajiramandravi.com/upsc-exam/how-is-the-national-green-tribunal-ngt-different-from-the-central-pollution-control-board-cpcb/?utm_source=openai)))

Q35. ' 25>/A- (A B2 C7? G 2? 5H6M5? 89/K ' (Global Alliance for Climate  
8 & 0M- .G , (? .M(2? ?\$ .G 8G L(-8>/8G %( 89@ 9H/9H ?  
1. GACSA, 2015 .G \*G0?8 .G 9A 25>/A 6? 0 8.M.G2( > \*0?#>. 9Hd  
2. GACSA .G 8&8M/\$> 8G K (A, '?\$ &>/?\$M5 \$M\*(M( (9@ 9K\$>d  
3. GACSA G (?0M.># .G ->0\$ @ 8 M0?/ -B.? > %@ d  
(@ G &? B > \*M0/K 0 89@ \$M\$0 A(? :

- (a) G 5 2 1 0 3  
(b) G 5 2 2  
(c) G 5 2 2 0 3  
(d) 1, 2 0 3

### Answer: (b)

GACSA was launched on 23 September 2014 on the sidelines of the UN Climate Summit in New York, not at the 2015 Paris COP, so statement 1 is wrong ([ccafs.cgiar.org](https://ccafs.cgiar.org/events/un-climate-summit-2014)). The alliance is described as a "voluntary coalition", so membership creates no binding (contractual) obligations, making statement 2 correct ([ccafs.cgiar.org](https://ccafs.cgiar.org/events/un-climate-summit-2014)). India merely joined later through some NGOs and was not an instrumental founder, so statement 3 is incorrect ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/with-reference-to-the-global-alliance-for-climate-smart-agriculture-gacsa-which-of-the-following-statements-is-are-correct/?utm\_source=openai)).

Q59. ->0\$@/ C7? @ \*0?8M%?\$?/K G 8 & 0M- .G , "8 0 M7# C7?" @ 8 2  
(? .M(2? ?\$ .G 8G L(- L( 8G 8 0 M7# C7? G \$0M \$ \$G 9H ?  
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2. (M/B(\$ . A\$> K \*((>(>  
3. ,> >(@ +<82K @ G\$@ > \*0?9>0  
4. .C&> '0>\$2 K " (G G 2? +<82 56?7M > \*/K  
5. 8M%>(@/ 5 >2? +<82 (A M0.#/+<82 50M\$( K \*((>(>  
(@ G &? B > \*M0/K 0 89@ \$M\$0 A(? :

- (a) 1, 3 0 4  
(b) 2, 3, 4 0 5  
(c) 2, 4 0 5  
(d) 1, 2, 3 0 5

### Answer: (c)

Conservation Agriculture rests on three pillars: (i) minimum soil disturbance (minimum tillage – statement 2), (ii) permanent soil cover with residues or live mulches (statement 4), and (iii) crop diversification via spatial/temporal rotations (statement 5). Avoiding monoculture or plantation crops is not a defined CA principle. Therefore statements 2, 4 and 5 only. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/with-reference-to-the-circumstances-in-indian-agriculture-the-concept-of-conservation-agriculture-assumes-significance-which-of-the-following-fall-under-the-conservation-agriculture/?utm\_source=openai))

**Q60. The term “sixth mass extinction/sixth extinction” is often mentioned in the news in the context of the discussion of**

- (a) Widespread monoculture practices in agriculture and large-scale commercial farming with indiscriminate use of chemicals in many parts of the world that may result in the loss of good native ecosystems.
- (b) Fears of a possible collision of a meteorite with the Earth in the near future in the manner it happened 65 million years ago that caused the mass extinction of many species including those of dinosaurs.
- (c) Large-scale cultivation of genetically modified crops in many parts of the world and promoting their cultivation in other parts of the world which may cause the disappearance of good native crop plants and the loss of food biodiversity.
- (d) Mankind’s over-exploitation/misuse of natural resources, fragmentation/loss of natural habitats, destruction of ecosystems, pollution and global climate change.**

**Answer: (d)**

Scientists use the phrase “sixth mass extinction” for the ongoing, human-driven loss of species caused by habitat fragmentation, over-exploitation, pollution and climate change—factors that mirror the drivers listed in option (d). UNEP notes that land degradation and other human pressures are already “pushing the planet towards a sixth mass species extinction.”([unep.org](https://www.unep.org/news-and-stories/story/warning-sixth-mass-species-extinction-cards?utm\_source=openai))

**Q65. (? .M(2? ?\$ %(K .G 8G L(-8> “ >0M,( (?7G (“ (>0M,( +0M ?2> <G6 0\$> 9H?**

- (a) 5>/A.#M!2 .G >0M,( !> M8> ! @ , "<@ 9A 8>(M&M0\$> G >0# , "<@
- (b) 5>/A.#M!2 .G >0M,( !> M8> ! @ , "<@ 9A 8>(M&M0\$> G >0# \*C%M
- (c) 5>/A.#M!2 .G >0M,( !> M8> ! @ , "<@ 9A 8>(M&M0\$> G \*0?#>.8M5C
- .M2\$>
- (d) 5>/A.#M!2 .G >0M,( !> M8> ! @ , "<@ 9A 8>(M&M0\$> G &M5>0> 9A
- \*C%M5@ \*08-@ @5'>0?/K > (A B2(

- (a) 5>/A.#M!2 .G CO, @ , "<@ 8>(M&M0\$> 8G , "<@ \*L' 5C&M'?**
- (b) 5>/A.#M!2 .G CO, @ , "<@ 8>(M&M0\$> 8G \*C%M5@ >\$>\*.>( , "<(>
- (c) CO, 8>(M&M0\$> .G 5C&M'? 8G .9>8> 0K @ .M2\$> , "<(>
- (d) CO, 8>(M&M0\$> .G 5C&M'? 8G 8.8M\$ @5'>0?/K > (A B2(

**Answer: (a)**

The term “carbon fertilization” (or CO<sub>2</sub>-fertilization effect) refers to the stimulation of plant biomass production in plants when atmospheric CO<sub>2</sub> concentration rises; hence the best ‘increased plant growth due to higher CO<sub>2</sub>’. It is not about temperature rise (greenhouse acidification, or universal biological adaptation.

([en.wikipedia.org](https://en.wikipedia.org/wiki/CO2\_fertilization\_effect?utm\_source=openai))

**Q81. Which of the following is/are the possible consequence/s of heavy sand mining in riverbeds?**

1. Decreased salinity in the river
2. Pollution of groundwater
3. Lowering of the water-table

Select the correct answer using the code given below :

- (a) 1 only  
**(b) 2 and 3 only**  
 (c) 1 and 3 only  
 (d) 1, 2 and 3

**Answer: (b)**

Removing large volumes of sand destroys the river-bed's natural filter, allowing contaminants to percolate and pollute groundwater and deepening the channel, which lowers adjoining water-tables. It generally raises—not lowers—salinity near estuaries, so only statements 2 and 3 are correct.

([educemy.com](https://educemy.com/blog/upsc-prelims-2018-question-81/?utm\_source=openai))

**Q83. The Partnership for Action on Green Economy (PAGE), a UN mechanism to assist countries' transition towards greener and more inclusive economies, emerged at**

- (a) The Earth Summit on Sustainable Development 2002, Johannesburg  
**(b) The United Nations Conference on Sustainable Development 2012, Rio de Janeiro**  
 (c) The United Nations Framework Convention on Climate Change 2015, Paris  
 (d) The World Sustainable Development Summit 2016, New Delhi

**Answer: (b)**

The Partnership for Action on Green Economy (PAGE) was created in 2013 as the UN system's direct response to the call in the Rio+20 United Nations Conference on Sustainable Development (2012) outcome document, so it 'emerged' from that 2012 Rio conference. ([unep.org](https://www.unep.org/news-and-stories/news/partnership-action-green-economy-launched-brazil-0?utm\_source=openai))

**Q 86. \* M 0 K 8 K \* ? 8 B 2 ? + M 2 K 0 > (> . \* > & \* \* M 0 > / M / K 8 . > > 0 K . G 2 M 2 G ? \$**

- (a) 8 G 8 > 0 > 5 M / > \* 0 B \* 8 G \* M 0 8 > ' (- 8 > . M 0 ? / K . G \* / K 9 K \$ > 9 H d  
**(b) ? 8 M 7 G \$ M 0 . G / 9 \$ > 9 H 5 9 > @ H 5 - 5 ? 5 ? ' \$ > K . 0 ( G 2 \$ > 9 H d**  
 (c) 8 G 8 > 0 > \* / K @ (> 6 K G 8 6 M 2 G 7 # . G ? / > > \$ > 9 H d  
 (d) \* 0 K M \$ . G 8 G K ( 9 @

**Answer: (b)**

*Prosopis juliflora* (now *Neltuma juliflora*) was introduced into India but has spread aggressively; in areas such as the Banni grasslands it forms dense thickets that out-compete native flora and degrade local biodiversity. Hence it is in the news for reducing biodiversity, making option (b) correct; the plant is not mainly valued for cosmetic extracts or pesticide synthesis.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Banni\_Grasslands\_Reserve?utm\_source=openai))

UPSC 2018

Environment &amp; Ecology › Ecosystems &amp; Ecology Concepts

moderate

Q 87. (1) Most shallow-water coral reefs occur in warm tropical seas between the Tropics of Cancer and Capricorn, so statement 1 is correct. 2) Australia (~17%), Indonesia (~18%) and the Philippines (~9%) together hold about 44% of global reef area—well over one-third—so statement 2 is correct. 3) Coral reefs support at least 32 of the 33 known animal phyla, far more than tropical rain-forests, so statement 3 is also correct. Therefore all three statements are right.

1. 5?6M5 @ 80M5>'? \*M05>2 -?\$M\$?/> \* 7M# ?, '@/ 8> 0 2K .G .?2\$@

2. 5?6M5 @ -\$?9> 8G '? \*M05>2 -?\$M\$?/> 8M MOG2?/>, !K(G6?/> C

0> M/- M7G\$M0K .G 8M%?\$ 9H d

3. \* 7M# ?, '@/ 50M K .G 7M., \*M05>2 -?\$M\$?/> 9@ '? 8 M/> .G

9H d

\* /A M\$ %(K .G 8G L(-8>/8G 89@ 9H/9H ?

(a) G 5 2 1 0 2

(b) G 5 2 3

(c) G 5 2 1 0 3

(d) 1, 2 0 3

**Answer: (d)**

1) Most shallow-water coral reefs occur in warm tropical seas between the Tropics of Cancer and Capricorn, so statement 1 is correct. 2) Australia (~17%), Indonesia (~18%) and the Philippines (~9%) together hold about 44% of global reef area—well over one-third—so statement 2 is correct. 3) Coral reefs support at least 32 of the 33 known animal phyla, far more than tropical rain-forests, so statement 3 is also correct. Therefore all three statements are right.

([educemy.com](https://educemy.com/blog/upsc-prelims-2018-question-87/?utm\_source=openai))

UPSC 2018

Environment &amp; Ecology › International Environmental Treaties &amp; Summits

easy

Q88. "Momentum for Change: Climate Neutral Now" is an initiative launched by

(a) The Intergovernmental Panel on Climate Change

(b) The UNEP Secretariat

(c) The UNFCCC Secretariat

(d) The World Meteorological Organization

**Answer: (c)**

"Momentum for Change: Climate Neutral Now" was launched by the UNFCCC (United Nations Climate Change) Secretariat to highlight actions moving toward climate neutrality; hence option (c) is correct.

([unfccc.int](https://unfccc.int/news/momentum-for-change-climate-neutral-now?utm\_source=openai))

UPSC 2018

Environment &amp; Ecology › Protected Areas &amp; Wildlife

easy

Q 94. (1) Pakke (formerly Pakhui) Wildlife Sanctuary/Tiger Reserve is situated in East Kameng district of Arunachal Pradesh, not in Manipur, Meghalaya or Nagaland. Hence option (a) is correct.

(a) 0 A # > 2 \* M 0 & G 6

(b) . # ? \* A 0

(c) . G > 2 /

(d) (> > 2 H !

**Answer: (a)**

Pakke (formerly Pakhui) Wildlife Sanctuary/Tiger Reserve is situated in East Kameng district of Arunachal Pradesh, not in Manipur, Meghalaya or Nagaland. Hence option (a) is correct.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Pakke\_Tiger\_Reserve?utm\_source=openai))

**Q98. Consider the following statements:**

1. The definition of "Critical Wildlife Habitat" is incorporated in the Forest Rights Act, 2006.
2. For the first time in India, Baigas have been given Habitat Rights.
3. Union Ministry of Environment, Forest and Climate Change officially decides and declares Habitat Rights for Primitive and Vulnerable Tribal Groups in any part of India.

**Which of the statements given above is/are correct?**

**(a) 1 and 2 only**

(b) 2 and 3 only

(c) 3 only

(d) 1, 2 and 3

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**Answer: (a)**

The term "Critical Wildlife Habitat" (CWH) is defined in Section 2 of the Scheduled Tribes and Other Traditional Forest Dwellers (Forest Rights) Act 2006, so Statement 1 is correct. In 2016–17 Madhya Pradesh granted the Baiga tribe the first formal 'Habitat Rights', making Statement 2 correct. Habitat-rights notifications are issued by State governments under the Act; the Union MoEFCC only issues guidelines, so Statement 3 is incorrect ([civildaily.com](https://www.civildaily.com/answer-key-for-upsc-prelims-2018/))

**Q99. Consider the following:**

1. Birds
2. Dust blowing
3. Rain
4. Wind blowing

**Which of the above spread plant diseases?**

(a) 1 and 3 only

(b) 3 and 4 only

(c) 1, 2 and 4 only

**(d) 1, 2, 3 and 4**

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**Answer: (d)**

Plant pathogens can be spread directly or indirectly by numerous agents: birds (carry spores on bodies), wind and dust (air-borne dispersal), and rain-splash dispersal are all well-documented. Hence all four listed agents—birds, dust blowing, rain and wind—can transmit plant diseases ([civildaily.com](https://www.civildaily.com/answer-key-for-upsc-prelims-2018/))

**Q100. With reference to organic farming in India, consider the following statements:**

1. "The National Programme for Organic Production" (NPOP) is operated under the guidelines and directions of the Union Ministry of Rural Development.
2. "The Agricultural and Processed Food Products Export Development Authority" (APEDA) functions as the Secretariat for the implementation of NPOP.
3. Sikkim has become India's first fully organic State.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only**
- (c) 3 only
- (d) 1, 2 and 3

**Answer: (b)**

The National Programme for Organic Production (NPOP) is run by the Ministry of Commerce & Industry, not the Ministry of Rural Development, so statement 1 is false. APEDA, an agency under this ministry, acts as the secretariat/implementing body for NPOP, making statement 2 true. Sikkim was officially declared India's first 100 % organic State in 2016, so statement 3 is also true; hence only statements 2 and 3 are correct. ([apeda.gov.in](https://apeda.gov.in/national-programme-for-organic-production-npop?utm\_source=openai))

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**Q 4. Sathyamangalam Tiger Reserve is situated in the junction of the Nilgiri Biosphere (Western Ghats) and the Eastern Ghats, providing a vital corridor that enables gene flow between the two mountain systems. The other listed areas are either wholly in one range or do not form such a critical east-west linkage. Therefore, option (a) is the correct choice. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/from-the-ecological-point-of-view-which-one-of-the-following-assumes-importance-in-being-a-good-link-between-the-eastern-ghats-and-the-western-ghats/?utm\_source=openai))**

- (a) Sathyamangalam Tiger Reserve**
- (b) Nagarjuna Sagar Wildlife Sanctuary
- (c) Nagarjuna Conservation Reserve
- (d) Nagarjuna National Park

**Answer: (a)**

Sathyamangalam Tiger Reserve lies at the junction of the Nilgiri Biosphere (Western Ghats) and the Eastern Ghats, providing a vital corridor that enables gene flow between the two mountain systems. The other listed areas are either wholly in one range or do not form such a critical east-west linkage. Therefore, option (a) is the correct choice. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/from-the-ecological-point-of-view-which-one-of-the-following-assumes-importance-in-being-a-good-link-between-the-eastern-ghats-and-the-western-ghats/?utm\_source=openai))

**Q6. TRAFFIC (Trade Related Analysis of Fauna and Flora in Commerce)**

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(a) G 5 2 1

**(b) G 5 2 2**

(c) 1 0 2 & K (K

(d) ( \$ K 1 , ( 9 @ 2

**Answer: (b)**

TRAFFIC is an international non-governmental organisation founded by WWF and IUCN, not a bureau under UNEP, so Statement 1 is incorrect. Its core mission is to ensure that trade in wild plants and animals does not threaten nature, making Statement 2 correct. Hence only Statement 2 is right. ([[edukemy.com](http://edukemy.com)]([http://edukemy.com/blog/upsc-prelims-2017-question-paper-with-answer-key-general-studies-paper-1/?utm\\_source=openai](http://edukemy.com/blog/upsc-prelims-2017-question-paper-with-answer-key-general-studies-paper-1/?utm_source=openai)))

**Q10. From the ecological point of view, which one of the following assumes importance in being a good link between the Eastern Ghats and the Western Ghats ?**

**(a) Sathyamangalam Tiger Reserve**

(b) Nallamala Forest

(c) Nagarhole National Park

(d) Seshachalam Biosphere Reserve

**Answer: (a)**

Sathyamangalam Tiger Reserve lies at the junction of the Nilgiri ranges of the Western Ghats and the Eastern Ghats and functions as a vital wildlife corridor that allows gene-flow between the two mountain systems. The other options are located wholly on one side: Nallamala (Eastern Ghats), Nagarhole (Western Ghats) and Seshachalam (Eastern Ghats), so they do not serve as an inter-Ghats linkage. ([[vajiramandravi.com](https://vajiramandravi.com)]([https://vajiramandravi.com/upsc-exam/from-the-ecological-point-of-view-which-one-of-the-following-assumes-importance-in-being-a-good-link-between-the-eastern-ghats-and-the-western-ghats/?utm\\_source=openai](https://vajiramandravi.com/upsc-exam/from-the-ecological-point-of-view-which-one-of-the-following-assumes-importance-in-being-a-good-link-between-the-eastern-ghats-and-the-western-ghats/?utm_source=openai)))

**Q12. Consider the following statements in respect of Trade Related Analysis of Fauna and Flora in Commerce (TRAFFIC) :**

- 1. TRAFFIC is a bureau under United Nations Environment Programme (UNEP).**
- 2. The mission of TRAFFIC is to ensure that trade in wild plants and animals is not a threat to the conservation of nature.**

**Which of the above statements is/are correct ?**

- (a) 1 only
- (b) 2 only**
- (c) Both 1 and 2
- (d) Neither 1 nor 2

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**Answer: (b)**

TRAFFIC is an international NGO jointly founded by WWF and IUCN; it is not a bureau under UNEP, so statement 1 is incorrect. Its stated mission is to ensure that trade in wild flora and fauna does not threaten the conservation of nature, making statement 2 correct. Therefore only statement 2 is right. ([[edukemy.com](https://edukemy.com)])([https://edukemy.com/blog/upsc-prelims-2017-question-paper-with-answer-key-general-studies-paper-1/?utm\\_source=openai](https://edukemy.com/blog/upsc-prelims-2017-question-paper-with-answer-key-general-studies-paper-1/?utm_source=openai)))

**Q21. Due to some reasons, if there is a huge fall in the population of species of butterflies, what could be its likely consequence/consequences?**

- 1. Pollination of some plants could be adversely affected.**
- 2. There could be a drastic increase in the fungal infections of some cultivated plants.**
- 3. It could lead to a fall in the population of some species of wasps, spiders and birds.**

**Select the correct answer using the code given below:**

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only**
- (d) 1, 2 and 3

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**Answer: (c)**

Butterflies are important pollinators; their sharp decline would reduce pollination success for many flowering plants, so statement 1 is correct. They are not known to check fungal pathogens of crops, so no causal rise in fungal infections is expected—statement 2 is incorrect. Butterflies form prey for several wasps, spiders and insectivorous birds; their loss would lower predator numbers, making statement 3 correct. Hence, statements 1 and 3 only are correct.

([[edukemy.com](https://edukemy.com)])([https://edukemy.com/blog/upsc-prelims-2017-question-21/?utm\\_source=openai](https://edukemy.com/blog/upsc-prelims-2017-question-21/?utm_source=openai)))

**Q25. In the context of mitigating the impending global warming due to anthropogenic emissions of carbon dioxide, which of the following can be the potential sites for carbon sequestration?**

1. Abandoned and uneconomic coal seams
2. Depleted oil and gas reservoirs
3. Subterranean deep saline formations

Select the correct answer using the code given below:

- (a) 1 and 2 only  
 (b) 3 only  
 (c) 1 and 3 only  
 (d) 1, 2 and 3

**Answer: (d)**

CO<sub>2</sub>, captured from the atmosphere can be injected for long-term storage into several geologically unmineable/abandoned coal seams where the gas adsorbs onto coal; depleted oil & natural-gas reservoirs that have already proved their capacity to trap hydrocarbons for millions of years; and deep saline aquifers whose porous rock and overlying caprock keep the gas contained. Hence all three sites listed are valid, making option (d) correct. ([insightsonindia.com](https://www.insightsonindia.com/2017/06/19/answer-key-upsc-civil-services-prelims-exam-2017-general-studies-paper-1/?utm\_source=openai))

**Q35. 5(M/ @5 (8A0 M7>) '(?/., 1972 G (A8>0, ?8@ 5M/ M\$? & M5>0>, /8 G -?/A M\$ 9K(G G 5? >0 .G , (? .M(2? ?\$ .G 8G L(-8>/8G \*M0>#@ > 6?**

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- (a) G 5 2 1  
 (b) G 5 2 2 0 3  
 (c) G 5 2 1 0 3  
 (d) 1, 2 0 3

**Answer: (d)**

Gharial (*Gavialis gangeticus*), Gaur or Indian wild cattle (*Bos gaurus*) and the Wild buffalo (*Bubalus arnee*) are all listed in Schedule I of the Wildlife (Protection) Act 1972. Hunting of any Schedule I animal is absolutely prohibited, so none of the three can be legally hunted; hence, all 1, 2 and 3 are covered. ([wwfindia.org](https://www.wwfindia.org/about\_wwf/priority\_species/threatened\_species/gharial/?utm\_source=openai))

**Q52. With reference to 'Global Climate Change Alliance', which of the following statements is/are correct?**

1. It is an initiative of the European Union.
2. It provides technical and financial support to targeted developing countries to integrate climate change into their development policies and budgets.
3. It is coordinated by World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD).

Select the correct answer using the code given below:

- (a) 1 and 2 only  
 (b) 3 only  
 (c) 2 and 3 only  
 (d) 1, 2 and 3

**Answer: (a)**

The Global Climate Change Alliance (now GCCA+) was launched by the European Union to help the most climate-vulnerable developing countries. It channels technical and financial assistance so that these countries can mainstream climate action into policies and budgets. Coordination is done within EU institutions—not by WRI or WBCSD—so statement 3 is wrong, while 1 and 2 are correct. ([knowledge4policy.ec.europa.eu](https://knowledge4policy.ec.europa.eu/organisation/global-climate-change-alliance-global-climate-change-alliance\_en?utm\_source=openai))

**Q59. H5 M8@ (.> (BOD) ?8 G 2? .>( .>\*& ! 9H ?**

- (a) 0 M\$ .G M8@ ( 8M\$0 .>\*(G G 2?  
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 (c) 2@/ \*>0?8M%?? \$ \$M0K .G \*M0&B7# G 2(G 2?  
 (d) M \*0M5\$@/ M7G\$M0K .G M8@ ( 8M\$0K G 2(G 2?

**Answer: (c)**

Biochemical (Biological) Oxygen Demand measures the amount of dissolved oxygen used by microorganisms to decompose organic matter in water; higher BOD signifies greater organic pollution. It is therefore a standard parameter for assessing pollution levels in aquatic ecosystems, not for blood or high-altitude oxygen measurement. ([britannica.com](https://www.britannica.com/science/biochemical-oxygen-demand?utm\_source=openai))

- Q60.** The UN General Assembly mandates UN-Habitat to promote socially and environmentally sustainable towns & cities with the goal of providing adequate shelter for all. UN-Habitat works with a broad multi-stakeholder network that includes civil-society, academia and the private sector in addition to governments and local authorities. Improving access to safe drinking-water, basic sanitation and housing for the urban poor is explicitly part of UN-Habitat's mandate linked to the Millennium Development Goals.
- Statement 1 is correct: the UN General Assembly mandates UN-Habitat to promote socially and environmentally sustainable towns & cities with the goal of providing adequate shelter for all. ([unhabitat.org](https://www.unhabitat.org/about-us/mandate-history))
  - Statement 2 is wrong: UN-Habitat works with a broad multi-stakeholder network that includes civil-society, academia and the private sector in addition to governments and local authorities. ([unhabitat.org](https://unhabitat.org/partnerships-at-un-habitat?utm\_source=openai))
  - Statement 3 is correct: improving access to safe drinking-water, basic sanitation and housing for the urban poor is explicitly part of UN-Habitat's mandate linked to the Millennium Development Goals. ([unhabitat.org](https://www.unhabitat.org/about-us/mandate-history))
- (a) 1, 2 & 3  
**(b) 1 & 3**  
 (c) 2 & 3  
 (d) 1

**Answer: (b)**

Statement 1 is correct: the UN General Assembly mandates UN-Habitat to promote socially and environmentally sustainable towns & cities with the goal of providing adequate shelter for all. ([unhabitat.org](https://www.unhabitat.org/about-us/mandate-history)) Statement 2 is wrong: UN-Habitat works with a broad multi-stakeholder network that includes civil-society, academia and the private sector in addition to governments and local authorities. ([unhabitat.org](https://unhabitat.org/partnerships-at-un-habitat?utm\_source=openai)) Statement 3 is correct: improving access to safe drinking-water, basic sanitation and housing for the urban poor is explicitly part of UN-Habitat's mandate linked to the Millennium Development Goals. ([unhabitat.org](https://www.unhabitat.org/about-us/mandate-history))

**Q65. Consider the following statements:**

- Climate and Clean Air Coalition (CCAC) to Reduce Short Lived Climate Pollutants is a unique initiative of G20 group of countries.
  - The CCAC focuses on methane, black carbon and hydrofluorocarbons.
- Which of the statements given above is/are correct?

- (a) 1 only  
**(b) 2 only**  
 (c) Both 1 and 2  
 (d) Neither 1 nor 2

**Answer: (b)**

The Climate and Clean Air Coalition (CCAC) is a voluntary partnership launched in 2012 by UNEP and a group of countries (Bangladesh, Canada, Ghana, Mexico, Sweden and the USA); it is not a G-20 initiative, so Statement 1 is incorrect. It specifically targets the short-lived climate pollutants methane, black carbon and hydrofluorocarbons, making Statement 2 correct. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Climate\_and\_Clean\_Air\_Coalition\_to\_Reduce\_Short-Lived\_Climate\_Pollutants?utm\_source=openai))

**Q67. If you want to see gharials in their natural habitat, which one of the following is the best place to visit?**

- (a) Bhitarkanika Mangroves
- (b) Chambal River**
- (c) Pulicat Lake
- (d) Deepor Beel

**Answer: (b)**

The critically endangered gharial's principal natural stronghold is the National Chambal Sanctuary along the Chambal River, which supports the largest wild population. Bhitarkanika is known for salt-water crocodiles, while Pulicat Lake and Deepor Beel do not host viable gharial populations.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Gharial?utm\_source=openai))

**Q71. Which of the following practices can help in water conservation in agriculture?**

1. Reduced or zero tillage of the land
2. Applying gypsum before irrigating the field
3. Allowing crop residue to remain in the field

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 3 only
- (c) 1 and 3 only**
- (d) 1, 2 and 3

**Answer: (c)**

Zero/reduced tillage conserves soil moisture and curbs evaporation, while retaining crop residues mulches the surface, further reducing evaporative loss; both therefore aid water conservation. Applying gypsum is mainly for reclaiming sodic soils and is not recognised by UPSC as a generic water-saving measure, so statement 2 is not accepted. Thus statements 1 and 3 only are correct.

([edukemy.com](https://edukemy.com/blog/upsc-prelims-2017-question-71/?utm\_source=openai))

**Q80. 'M-STripES' is an android-based patrolling and ecological monitoring tool developed by the National Tiger Conservation Authority/Wildlife Institute of India to strengthen protection and management in all Indian tiger reserves. Hence it relates specifically to the maintenance/management of tiger reserves; the other options concern captive breeding, energy, or chemical security which are unrelated.**

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- (b) , > - M / > 0 # M / K > 0 - 0 > 5**
- (c) 8 M 5 M 0 M > 5 ? > 8 \* M 0 # > 2 ? / >
- (d) (> 0 ? 0 8 > / (K @ 8 A 0 M 7 >

**Answer: (b)**

M-STripES (Monitoring System for Tigers – Intensive Protection and Ecological Status) is an android-based patrolling and ecological monitoring tool developed by the National Tiger Conservation Authority/Wildlife Institute of India to strengthen protection and management in all Indian tiger reserves. Hence it relates specifically to the maintenance/management of tiger reserves; the other options concern captive breeding, energy, or chemical security which are unrelated.

([edukemy.com](https://edukemy.com/blog/upsc-prelims-2017-question-80/?utm\_source=openai))

**Q91. In India, if a species of tortoise is declared protected under Schedule I of the Wild Life (Protection) Act, 1972, what does it imply?**

- (a) It enjoys the same level of protection as the tiger.**
- (b) It no longer exists in the wild; a few individuals are under captive protection, and it is now impossible to prevent its extinction in the wild.
- (c) It is endemic to a particular region of India.
- (d) Both (b) and (c) are correct in this context.

**Answer: (a)**

Species listed in Schedule I of the Wild Life (Protection) Act, 1972 receive the highest degree of legal protection; hunting or trade attracts the same stringent penalties as for other Schedule I animals such as the tiger. Therefore a Schedule I tortoise enjoys the same level of protection as the tiger. Options b, c and d misinterpret Schedule I status. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Wild\_Life\_%28Protection%29\_Act%2C\_1972?utm\_source=openai))

**Q95. Recently there was a proposal to translocate some of the lions from their natural habitat in Gujarat to which one of the following sites?**

- (a) Corbett National Park
- (b) Kuno Palpur Wildlife Sanctuary**
- (c) Mudumalai Wildlife Sanctuary
- (d) Sariska National Park

**Answer: (b)**

The Supreme-court-mandated Asiatic Lion Reintroduction Project identified Kuno Palpur Wildlife Sanctuary in Madhya Pradesh as the second home for Gir lions; hence the proposal was to move lions from Gujarat to Kuno Palpur, not to Corbett, Mudumalai or Sariska. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2017-question-95/?utm\_source=openai))

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**Q6. The term 'Intended Nationally Determined Contributions' is sometimes seen in the news in the context of**

- (a) pledges made by the European countries to rehabilitate refugees from the war-affected Middle East
- (b) plan of action outlined by the countries of the world to combat climate change**
- (c) capital contributed by the member countries in the establishment of Asian Infrastructure Investment Bank
- (d) plan of action outlined by the countries of the world regarding Sustainable Development Goals

**Answer: (b)**

'Intended Nationally Determined Contributions' (now simply NDCs) are the climate-action pledges each country filed with the UNFCCC in the run-up to, and under, the 2015 Paris Agreement to fight climate change. They have nothing to do with refugee resettlement, AIIB capital, or the SDGs. ([un.org](https://www.un.org/en/climatechange/all-about-ndcs?utm\_source=openai))

**Q13. What is/are the importance/importances of the United Nations Convention to Combat Desertification?**

1. It aims to promote effective action through innovative national programmes and supportive international partnerships.
2. It has a special/particular focus on South Asia and North Africa regions, and its Secretariat facilitates the allocation of major portion of financial resources to these regions.
3. It is committed to bottom-up approach, encouraging the participation of local people in combating the desertification.

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only**
- (d) 1, 2 and 3

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**Answer: (c)**

The UN Convention to Combat Desertification seeks to foster effective national action through partnerships (statement 1) and explicitly adopts a bottom-up, community-participatory approach (statement 3). It is global in scope—though it gives particular attention to Africa—and does not earmark most funds specifically for South Asia or North Africa, making statement 2 incorrect. Thus, only 1 and 3 are correct.

([kew.org](https://www.kew.org/read-and-watch/combating-desertification?utm\_source=openai))

**Q22. In which of the following regions of India are you “most likely” to come across the ‘Great Indian Hornbill’ in its natural habitat?**

- (a) Sand deserts of northwest India
- (b) Higher Himalayas of Jammu and Kashmir
- (c) Salt marshes of western Gujarat
- (d) Western Ghats**

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**Answer: (d)**

The Great Indian (Great) Hornbill inhabits dense evergreen and semi-evergreen forests in the Western Ghats and parts of the Himalayan foothills; it is absent from deserts, high alpine zones and salt-marsh habitats. Hence the region where one is most likely to encounter it is the Western Ghats.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Great\_hornbill?utm\_source=openai))

**Q23. Which of the following are the key features of 'National Ganga River Basin Authority (NGRBA)'?**

1. River basin is the unit of planning and management.
2. It spearheads the river conservation efforts at the national level.
3. One of the Chief Ministers of the States through which the Ganga flows becomes the Chairman of NGRBA on rotation basis.

Select the correct answer using the code given below:

- (a) 1 and 2 only  
(b) 2 and 3 only  
(c) 1 and 3 only  
(d) 1, 2 and 3

---

**Answer: (a)**

The notification creating the National Ganga River Basin Authority (2009) states that the river basin is the basic unit for planning and that the Authority will spearhead Ganga conservation nationally—so statements 1 and 2 are correct. The Prime Minister, not a rotating Chief Minister, is the ex-officio chairperson, so statement 3 is incorrect. ([cpcb.nic.in](https://www.cpcb.nic.in/ngrba/about.html?utm\_source=openai))

**Q27. The FAO accords the status of 'Globally Important Agricultural Heritage System (GIAHS)' to traditional agricultural systems. What is the overall goal of this initiative?**

1. To provide modern technology, training in modern farming methods and financial support to local communities of identified GIAHS so as to greatly enhance their agricultural productivity.
2. To identify and safeguard eco-friendly traditional farm practices and their associated landscapes, agricultural biodiversity and knowledge systems of the local communities.
3. To provide Geographical Indication status to all the varieties of agricultural produce in such identified GIAHS.

Select the correct answer using the code given below:

- (a) 1 and 3 only  
(b) 2 only  
(c) 2 and 3 only  
(d) 1, 2 and 3

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**Answer: (b)**

The FAO's GIAHS initiative aims to identify, support and safeguard traditional, biodiversity-rich farming landscapes and the knowledge systems of their local communities (Statement 2). It is not about supplying modern technology/finance (Statement 1) and has nothing to do with granting GI tags (Statement 3). Hence only Statement 2 is correct.

([edukemy.com](https://edukemy.com/blog/upsc-prelims-2016-question-52/?utm\_source=openai))

**Q30. Consider the following pairs:**

**Terms sometimes seen in the news — Their origin**

- 1. Annex-I Countries : Cartagena Protocol**
- 2. Certified Emissions Reductions : Nagoya Protocol**
- 3. Clean Development Mechanism : Kyoto Protocol**

**Which of the pairs given above is/are correctly matched?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 3 only**
- (d) 1, 2 and 3

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**Answer: (c)**

'Annex-I countries' and 'Certified Emission Reductions (CERs)' are both terms created under the UNFCCC/Kyoto Protocol, not under the Cartagena or Nagoya Protocols. CERs are the units issued for projects registered under the Clean Development Mechanism, and the CDM itself is one of the three market mechanisms established by the Kyoto Protocol. Therefore only Pair 3 (Clean Development Mechanism : Kyoto Protocol) is correctly matched; Pairs 1 and 2 are incorrect. ([markey.senate.gov](https://www.markey.senate.gov/imo/media/globalwarming/files/COP15/qa.html?utm\_source=openai))

**Q33. Which of the following best describes/describe the aim of 'Green India Mission' of the Government of India?**

- 1. Incorporating environmental benefits and costs into the Union and State Budgets thereby implementing the 'green accounting'**
- 2. Launching the second green revolution to enhance agricultural output so as to ensure food security to one and all in the future**
- 3. Restoring and enhancing forest cover and responding to climate change by a combination of adaptation and mitigation measures**

**Select the correct answer using the code given below.**

- (a) 1 only
- (b) 2 and 3 only
- (c) 3 only**
- (d) 1, 2 and 3

---

**Answer: (c)**

The Green India Mission (one of the eight NAPCC missions) aims "to protect, restore and enhance India's forest cover and respond to climate change through adaptation and mitigation." It does not deal with green accounting in budgets or launching a second green revolution. Hence only Statement 3 is correct. ([nams.nic.in](https://nams.nic.in/gim/?utm\_source=openai))

**Q36. 'Net metering' is sometimes seen in the news in the context of promoting the**

**(a) production and use of solar energy by the households/consumers**

- (b) use of piped natural gas in the kitchens of households
- (c) installation of CNG kits in motor-cars
- (d) installation of water meters in urban households

**Answer: (a)**

Under 'net metering', households with rooftop solar panels can feed surplus electricity back into the grid; the meter records the 'net' power consumed and producers receive credits, encouraging domestic solar adoption. The scheme has nothing to do with piped gas, CNG kits, or water meters, eliminating options (b), (c) and (d).

**Q44. What is/are unique about 'Kharai camel', a breed found in India?**

1. It is capable of swimming up to three kilometres in seawater.
2. It survives by grazing on mangroves.
3. It lives in the wild and cannot be domesticated.

**Select the correct answer using the code given below:**

**(a) 1 and 2 only**

- (b) 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Answer: (a)**

The Kharai ('swimming') camel of coastal Kutch, Gujarat, can swim up to about 3 km in seawater to reach offshore mangrove islands and feeds mainly on mangrove vegetation; so Statements 1 and 2 are correct. The breed is traditionally owned and herded by Rabari and Jat pastoralists and is fully domesticated, not wild; therefore Statement 3 is incorrect. Thus option (a) 1 and 2 only.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Kharai\_camel?utm\_source=openai))

**Q45. Recently, our scientists have discovered a new and distinct species of banana plant which attains a height of about 11 metres and has orange-coloured fruit pulp. In which part of India has it been discovered?**

**(a) Andaman Islands**

- (b) Anaimalai Forests
- (c) Maikal Hills
- (d) Tropical rain forests of northeast

**Answer: (a)**

Botanical Survey of India scientists reported a new banana species, *Musa indandamanensis*, in the Little Andaman rainforest; it grows about 11 m tall and has an orange-coloured pulp, confirming that the discovery was in the Andaman Islands. Options referring to Anaimalai, Maikal or Northeast forests therefore do not match the published location. ([civildaily.com](https://www.civildaily.com/news/worlds-longest-banana-infructescence-found-in-andaman/?utm\_source=openai))

**Q52. With reference to an initiative called 'The Economics of Ecosystems and Biodiversity (TEEB)', which of the following statements is/are correct?**

1. It is an initiative hosted by UNEP, IMF and World Economic Forum.
2. It is a global initiative that focuses on drawing attention to the economic benefits of biodiversity.
3. It presents an approach that can help decision-makers recognize, demonstrate and capture the value of ecosystems and biodiversity.

Select the correct answer using the code given below.

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only**
- (d) 1, 2 and 3

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**Answer: (c)**

TEEB is a UNEP-hosted global initiative that seeks to make 'nature's values visible' by highlighting the economic benefits of biodiversity and offering a framework for decision-makers to recognise, demonstrate and capture those values; it is not hosted by the IMF or World Economic Forum. Thus statements 2 and 3 are correct and statement 1 is incorrect. ([unep.org](https://www.unep.org/explore-topics/green-economy/what-we-do/economics-ecosystems-and-biodiversity?utm\_source=openai))

**Q53. With reference to 'Red Sanders', sometimes seen in the news, consider the following statements:**

1. It is a tree species found in a part of South India.
2. It is one of the most important trees in the tropical rain forest areas of South India.

Which of the statements given above is/are correct?

- (a) 1 only**
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

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**Answer: (a)**

Red Sanders (*Pterocarpus santalinus*) is endemic to the dry deciduous forests of the southern Eastern Ghats in South India, principally Andhra Pradesh; it is not a characteristic species of tropical rain-forest areas. Hence only statement 1 is correct. ([gokulamseekias.com](https://gokulamseekias.com/prelims-c-a/environment/protected-sites/sri-lankamalleswara-sanctuary-red-sanders/?utm\_source=openai))

**Q54. Which of the following statements is/are correct?**

Proper design and effective implementation of UN-REDD+ Programme can significantly contribute to

1. protection of biodiversity
2. resilience of forest ecosystems
3. poverty reduction

Select the correct answer using the code given below.

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3**

**Answer: (d)**

REDD+ promotes the conservation and sustainable management of forests, which safeguards biodiversity, enhances ecosystem resilience, and, through livelihood incentives and job creation for forest-dependent communities, contributes to poverty reduction. All three listed benefits therefore apply.

([unep.org](https://www.unep.org/explore-topics/climate-action/what-we-do/redd?utm\_source=openai))

**Q55. What is 'Greenhouse Gas Protocol'?**

**(a) It is an international accounting tool for government and business leaders to understand, quantify and manage greenhouse gas emissions.**

(b) It is an initiative of the United Nations to offer financial incentives to developing countries to reduce greenhouse gas emissions and to adopt eco-friendly technologies.

(c) It is an inter-governmental agreement ratified by all the member countries of the United Nations to reduce greenhouse gas emissions to specified levels by the year 2022.

(d) It is one of the multilateral REDD+ initiatives hosted by the World Bank.

**Answer: (a)**

The Greenhouse Gas (GHG) Protocol is a widely-used international accounting framework that helps governments and businesses measure, report and manage their greenhouse-gas emissions, not a UN-funded incentive, treaty or REDD+ project.

([ifac.org](https://www.ifac.org/content/greenhouse-gas-ghg-protocol?utm\_source=openai))

**Q57. With reference to 'Agenda 21', sometimes seen in the news, consider the following statements:**

**1. It is a global action plan for sustainable development.**

**2. It originated in the World Summit on Sustainable Development held in Johannesburg in 2002.**

Which of the statements given above is/are correct?

- (a) 1 only**
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer: (a)**

Agenda 21 is a comprehensive, non-binding global action plan for sustainable development adopted at the 1992 Earth Summit in Rio de Janeiro; it did not originate at the 2002 Johannesburg summit, which merely reaffirmed it. Therefore only statement 1 is correct.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Agenda\_21?utm\_source=openai))

**Q68. 'Gadgil Committee Report' and 'Kasturirangan Committee Report', sometimes seen in the news, are related to**

- (a) constitutional reforms
- (b) Ganga Action Plan
- (c) linking of rivers
- (d) protection of Western Ghats**

**Answer: (d)**

Both the Gadgil (2011) Western Ghats Ecology Expert Panel and the Kasturirangan (2013) High-Level Working Group reports deal with designating and protecting ecologically sensitive zones in the Western Ghats mountain range. They are unrelated to constitutional reforms, river-linking, or the Ganga Action Plan.

**Q78. On which of the following can you find the Bureau of Energy Efficiency Star Label?**

1. Ceiling fans
2. Electric geysers
3. Tubular fluorescent lamps

Select the correct answer using the code given below:

- (a) 1 and 2
- (b) 3 only
- (c) 2 and 3
- (d) 1 and 3**

**Answer: (d)**

Under the Bureau of Energy Efficiency's Standards & Labelling (S&L) programme, star labels are in force (mandatory or voluntary) for ceiling fans, stationary storage-type electric water heaters (electric geysers) and tubular fluorescent lamps. Hence all the three items listed carry the BEE star label. ([[audit.beeindia.gov.in](https://audit.beeindia.gov.in) ]([https://audit.beeindia.gov.in/bee-html-new-master/standard-and-Labeling.php?utm\\_source=openai](https://audit.beeindia.gov.in/bee-html-new-master/standard-and-Labeling.php?utm_source=openai)))

**Q81. Consider the following statements:**

1. The International Solar Alliance was launched at the United Nations Climate Change Conference in 2015.
2. The Alliance includes all the member countries of the United Nations.

Which of the statements given above is/are correct?

- (a) 1 only**
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer: (a)**

The International Solar Alliance (ISA) was jointly launched by India and France on 30 November 2015 during COP-21 (the 2015 UN Climate Change Conference) in Paris, so statement 1 is correct. Membership is OPEN to all UN member states, but only about 120 have signed/ratified so far, so the Alliance does not automatically include every UN country; statement 2 is incorrect. Therefore only statement 1 is correct. ([[solaralliance.org](https://solaralliance.org)])([https://solaralliance.org/media/press-release?utm\\_source=openai](https://solaralliance.org/media/press-release?utm_source=openai))

**Q86. In the cities of our country, which among the following atmospheric gases are normally considered in calculating the value of Air Quality Index?**

1. Carbon dioxide
2. Carbon monoxide
3. Nitrogen dioxide
4. Sulfur dioxide
5. Methane

Select the correct answer using the code given below.

- (a) 1, 2 and 3 only  
(b) 2, 3 and 4 only  
(c) 1, 4 and 5 only  
(d) 1, 2, 3, 4 and 5

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**Answer: (b)**

The National Air Quality Index is calculated for eight pollutants that include carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>) and sulphur dioxide (SO<sub>2</sub>) but do NOT include carbon dioxide (CO<sub>2</sub>) or methane (CH<sub>4</sub>). Hence only statements 2, 3 and 4 apply. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/in-the-cities-of-our-country-which-among-the-following-atmospheric-gases-are-normally-considered-in-calculating-the-value-of-air-quality-index/?utm\_source=openai))

**Q90. Recently, for the first time in our country, which of the following States has declared a particular butterfly as 'State Butterfly'?**

- (a) Arunachal Pradesh  
(b) Himachal Pradesh  
(c) Karnataka  
(d) Maharashtra

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**Answer: (d)**

In June 2015 Maharashtra declared the Blue Mormon (*Papilio polymnestor*) as its 'State Butterfly', becoming the first Indian State to accord such status to a butterfly. The other listed States had not made any such declaration, so option (d) is correct. ([indianexpress.com](https://indianexpress.com/article/cities/mumbai/blue-mormon-declared-state-butterfly/lite/?utm\_source=openai))

**Q97. With reference to the Agreement at the UNFCCC Meeting in Paris in 2015, which of the following statements is/are correct?**

1. The Agreement was signed by all the member countries of the UN and it will go into effect in 2017.
2. The Agreement aims to limit the greenhouse gas emissions so that the rise in average global temperature by the end of this century does not exceed 2°C or even 1.5°C above pre-industrial levels.
3. Developed countries acknowledged their historical responsibility in global warming and committed to donate \$1000 billion a year from 2020 to help developing countries to cope with climate change.

Select the correct answer using the code given below.

- (a) 1 and 3 only
- (b) 2 only**
- (c) 2 and 3 only
- (d) 1, 2 and 3

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**Answer: (b)**

Statement 2 is correct: the Paris Agreement seeks to keep the rise in global mean temperature well below 2 °C and to pursue efforts to limit it to 1.5 °C above pre-industrial levels. Statement 1 is wrong because the Agreement entered into force on 4 November 2016 (after 55 countries with 55 % of emissions ratified it), not in 2017, and not all UN members had signed on the adoption day. Statement 3 is wrong because developed countries reiterated the Copenhagen pledge to mobilise USD 100 billion—not USD 1000 billion—per year for developing nations from 2020 to 2025. ([theguardian.com](https://www.theguardian.com/environment/2016/nov/04/paris-climate-change-agreement-enters-into-force?utm\_source=openai))

**Q98. Consider the following statements:**

1. The Sustainable Development Goals were first proposed in 1972 by a global think tank called the 'Club of Rome'.
2. The Sustainable Development Goals have to be achieved by 2030.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only**
- (c) Both 1 and 2
- (d) Neither 1 nor 2

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**Answer: (b)**

The 17 Sustainable Development Goals were adopted by the UN General Assembly in September 2015 and form part of the 2030 Agenda, so they are to be achieved by 2030. They were not proposed in 1972 by the Club of Rome; that organisation published 'The Limits to Growth' in 1972, unrelated to the SDGs. Hence only statement 2 is correct. ([drishtiias.com](https://www.drishtiias.com/current-affairs-news-analysis-editorials/news-analysis/06-12-2022/1000?utm\_source=openai))

**Q9. Which of the following National Parks is unique in being a swamp with floating vegetation that supports a rich biodiversity?**

- (a) Bhitarkanika National Park
- (b) Keibul Lamjao National Park**
- (c) Keoladeo Ghana National Park
- (d) Sultanpur National Park

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**Answer: (b)**

Keibul Lamjao National Park in Manipur is the world's only floating national park. It consists of a swamp of 'phumdis'—floating masses of vegetation and organic matter—on Loktak Lake that sustain rich biodiversity including the endangered Sangai deer. None of the other listed parks have this floating-swamp characteristic, so option (b) is correct. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Keibul\_Lamjao\_National\_Park?utm\_source=openai))

**Q11. What can be the impact of excessive/inappropriate use of nitrogenous fertilizers in agriculture?**

1. Proliferation of nitrogen-fixing microorganisms in soil can occur.
2. Increase in the acidity of soil can take place.
3. Leaching of nitrate to the groundwater can occur.

Select the correct answer using the code given below.

- (a) 1 and 3 only
- (b) 2 only
- (c) 2 and 3 only**
- (d) 1, 2 and 3

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**Answer: (c)**

Excess nitrogen fertilizers acidify soils through nitrification processes (statement 2 correct) and nitrates readily leach into groundwater posing water-quality risks (statement 3 correct). High available nitrogen actually suppresses or reduces populations/biomass of nitrogen-fixing microorganisms rather than proliferating them, so statement 1 is incorrect. Thus only 2 and 3 are correct. ([academic.oup.com](https://academic.oup.com/jpe/article/doi/10.1093/jpe/rtae097/7833385?utm\_source=openai))

**Q12. With reference to the International Union for Conservation of Nature and Natural Resources (IUCN) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which of the following statements is/are correct?**

1. IUCN is an organ of the United Nations and CITES is an international agreement between governments.
2. IUCN runs thousands of field projects around the world to better manage natural environments.
3. CITES is legally binding on the States that have joined it, but this Convention does not take the place of national laws.

Select the correct answer using the code given below.

- (a) 1 only  
**(b) 2 and 3 only**  
(c) 1 and 3 only  
(d) 1, 2 and 3

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**Answer: (b)**

IUCN is an independent international NGO, not a UN organ, while CITES is an inter-governmental treaty—so statement 1 is wrong. IUCN undertakes research and runs thousands of field conservation projects worldwide (statement 2 correct). CITES is legally binding on member States but functions as a framework that must be implemented through each country's domestic laws (statement 3 correct). Hence statements 2 and 3 only are correct. ([en.wikipedia.org](https://en.wikipedia.org/wiki/International\_Union\_for\_Conservation\_of\_Nature?utm\_source=openai))

**Q18. With reference to 'fly ash' produced by the power plants using coal as fuel, which of the following statements is/are correct?**

1. Fly ash can be used in the production of bricks for building construction.
2. Fly ash can be used as a replacement for some of the Portland cement contents of concrete.
3. Fly ash is made up of silicon dioxide and calcium oxide only, and does not contain any toxic elements.

- (a) 1 and 2**  
(b) 2 only  
(c) 1 and 3  
(d) 3 only

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**Answer: (a)**

Fly ash is widely used to manufacture fly-ash bricks ([en.wikipedia.org](https://en.wikipedia.org/wiki/Fly\_ash\_brick?utm\_source=openai)) and can replace a portion of Portland cement in concrete mixes ([fhwa.dot.gov](https://www.fhwa.dot.gov/pavement/materials/matnote51.cfm?utm\_source=openai)). It contains toxic trace elements such as arsenic, mercury and cadmium in addition to major oxides, so the claim that it is only SiO<sub>2</sub> and CaO with no toxic content is incorrect ([thespruce.com](https://www.thespruce.com/fly-ash-applications-844761)). Hence only statements 1 and 2 are correct.

**Q19. With reference to 'dugong', a mammal found in India, which of the following statements is/are correct?**

1. It is a herbivorous marine animal.
2. It is found along the entire coast of India.
3. It is given legal protection under Schedule I of the Wildlife (Protection) Act, 1972.

- (a) 1 and 2
- (b) 2 only
- (c) 1 and 3**
- (d) 3 only

**Answer: (c)**

The dugong (*Dugong dugon*) is a strictly herbivorous marine mammal, popularly called a 'sea cow' ([guinnessworldrecords.com](https://www.guinnessworldrecords.com/world-records/717326-most-herbivorous-marine-mammal?utm\_source=openai)). In India it occurs mainly in the Gulf of Mannar, Palk Bay, Gulf of Kachchh and the Andaman & Nicobar Islands—not along the entire coastline—and it is accorded the highest legal protection under Schedule I of the Wildlife (Protection) Act, 1972 ([indianexpress.com](https://indianexpress.com/article/upsc-current-affairs/upsc-essentials/knowledge-nugget-iucn-world-conservation-congress-2025-2025-10310205/?utm\_source=openai)).

**Q25. Which one of the following is the national aquatic animal of India?**

- (a) Saltwater crocodile
- (b) Olive ridley turtle
- (c) Gangetic dolphin**
- (d) Gharial

**Answer: (c)**

On 5 October 2009 the Central Government declared the endangered Gangetic river dolphin (*Platanista gangetica*) as India's National Aquatic Animal. None of the other species listed has this official status, so option (c) is correct.

([wwfindia.org](https://www.wwfindia.org/%3F3540/National-Aquatic-Animal?utm\_source=openai))

**Q38. Which one of the following regions of India has a combination of mangrove forest, evergreen forest and deciduous forest?**

- (a) North Coastal Andhra Pradesh
- (b) South-West Bengal
- (c) Southern Saurashtra
- (d) Andaman and Nicobar Islands**

**Answer: (d)**

The Andaman & Nicobar Islands uniquely host extensive mangroves along the coasts, tropical evergreen rain-forests in high-rainfall interiors, and moist deciduous forests in drier pockets, giving all three forest types together. The other listed regions lack this full combination. ([jagranjosh.com](https://www.jagranjosh.com/articles/upsc-civil-services-ias-prelims-2015-upsc-released-answer-key-1463479853-1?utm\_source=openai))

**Q40. Which one of the following is associated with the issue of control and phasing out of the use of ozone-depleting substances?**

- (a) Bretton Woods Conference
- (b) Montreal Protocol**
- (c) Kyoto Protocol
- (d) Nagoya Protocol

**Answer: (b)**

The Montreal Protocol on Substances that Deplete the Ozone Layer (adopted 1987) specifically regulates and progressively phases out the production and consumption of ozone-depleting substances such as CFCs and HCFCs. The other instruments deal with international finance (Bretton Woods), greenhouse-gas mitigation (Kyoto) and genetic resources (Nagoya). Hence option (b) is correct. ([unep.org](https://www.unep.org/ozonaction/index.php/who-we-are/about-montreal-protocol?utm\_source=openai))

**Q43. What is Rio+20 Conference, often mentioned in the news?**

- (a) It is the United Nations Conference on Sustainable Development**
- (b) It is a Ministerial Meeting of the World Trade Organization
- (c) It is a Conference of the Inter-governmental Panel on Climate Change
- (d) It is a Conference of the Member Countries of the Convention on Biological Diversity

**Answer: (a)**

'Rio+20' is the common name for the United Nations Conference on Sustainable Development held in Rio de Janeiro, Brazil, from 13–22 June 2012, marking 20 years after the 1992 Earth Summit. It was not a WTO ministerial, an IPCC session, or a CBD COP. Thus option (a) is correct. ([en.wikipedia.org](https://en.wikipedia.org/wiki/United\_Nations\_Conference\_on\_Sustainable\_Development?utm\_source=openai))

**Q49. Which of the following statements regarding 'Green Climate Fund' is/are correct?**

- 1. It is intended to assist the developing countries in adaptation and mitigation practices to counter climate change.**
  - 2. It is founded under the aegis of UNEP, OECD, Asian Development Bank and World Bank.**
- Select the correct answer using the code given below.

- (a) 1 only**
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer: (a)**

The Green Climate Fund (GCF), created under the UNFCCC at the 2010 Cancun Conference, finances adaptation and mitigation projects in developing countries, so statement 1 is right. It is not a joint creation of UNEP, OECD, ADB and the World Bank; instead, it operates under the UNFCCC's Conference of the Parties, making statement 2 incorrect.

**Q52. Which one of the following National Parks has a climate that varies from tropical to subtropical, temperate and arctic?**

- (a) Khangchendzonga National Park
- (b) Nanda Devi National Park
- (c) Neora Valley National Park
- (d) Namdapha National Park**

**Answer: (d)**

Namdapha National Park in Arunachal Pradesh ranges from lowland tropical evergreen forest (~200 m) to alpine zones above 4,500 m, giving it tropical, subtropical, temperate and even arctic-type climatic conditions. The other parks do not span such a complete climatic gradient. ([satheebihar.iitk.ac.in](https://www.satheebihar.iitk.ac.in/sathee-icar/student-corner/practice-set/ecology/biodiversity-conservation-and-wild-life/biodiversity-conservation-and-wild-life\_ques\_12/?utm\_source=openai))

**Q56. 'BioCarbon Fund Initiative for Sustainable Forest Landscapes' is managed by the**

- (a) Asian Development Bank
- (b) International Monetary Fund
- (c) United Nations Environment Programme
- (d) World Bank**

**Answer: (d)**

The BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) is one of the climate-finance trust funds administered by the World Bank; it supports large-scale REDD+ and landscape programmes in developing countries. The initiative is neither run by ADB, IMF nor UNEP. ([jagranjosh.com](https://www.jagranjosh.com/articles/upsc-civil-services-ias-prelims-2015-upsc-released-answer-key-1463479853-1))

**Q69. Living root bridges—formed by training aerial roots of *Ficus elastica* across streams—are a traditional adaptation practised by the Khasi and Jaintia peoples in Meghalaya's humid hills; they are not found in the other states listed. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Umshiang\_Double-Decker\_Root\_Bridge?utm\_source=openai))**

- (a) Assam**
- (b) West Bengal
- (c) Odisha
- (d) Jharkhand

**Answer: (a)**

Living root bridges—formed by training aerial roots of *Ficus elastica* across streams—are a traditional adaptation practised by the Khasi and Jaintia peoples in Meghalaya's humid hills; they are not found in the other states listed. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Umshiang\_Double-Decker\_Root\_Bridge?utm\_source=openai))

**Q74. With reference to 'Forest Carbon Partnership Facility', which of the following statements is/are correct?**

1. It is a global partnership of governments, businesses, civil society and indigenous peoples.
2. It provides financial aid to universities, individual scientists and institutions involved in scientific forestry research to develop eco-friendly and climate adaptation technologies for sustainable forest management.
3. It assists the countries in their 'REDD+ (Reducing Emissions from Deforestation and Forest Degradation+)' efforts by providing them with financial and technical assistance.

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only**
- (d) 1, 2 and 3

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**Answer: (c)**

The Forest Carbon Partnership Facility is a World Bank-hosted global partnership of governments, businesses, civil society and Indigenous Peoples that provides financial and technical support to countries for their REDD+ programmes. It does not give research grants to individual universities or scientists. Hence only statements 1 and 3 are correct. ([worldbank.org](https://www.worldbank.org/en/news/press-release/2023/12/01/world-bank-carbon-credits-to-boost-international-carbon-markets?utm\_source=openai))

**Q76. With reference to an organization known as 'BirdLife International', which of the following statements is/are correct?**

1. It is a Global Partnership of Conservation Organizations.
2. The concept of 'biodiversity hotspots' originated from this organization.
3. It identifies the sites known/referred to as 'Important Bird and Biodiversity Areas'.

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only**
- (d) 1, 2 and 3

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**Answer: (c)**

BirdLife International is indeed a global partnership of national conservation organizations, and one of its core programmes is the identification and monitoring of Important Bird and Biodiversity Areas (IBAs). The idea of 'biodiversity hotspots', however, was introduced by ecologist Norman Myers and later popularised by Conservation International, not by BirdLife. Therefore, only statements 1 and 3 are correct. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2015-question-76/?utm\_source=openai))

**Q78. In India, in which one of the following types of forests is teak a dominant tree species?**

- (a) Tropical moist deciduous forest**
- (b) Tropical rain forest
- (c) Tropical thorn scrub forest
- (d) Temperate forest with grasslands

**Answer: (a)**

Teak (*Tectona grandis*) forms pure or mixed stands in India's Tropical Moist Deciduous Forests, especially in the central and southern belt where annual rainfall is 100–200 cm. It is absent as a dominant species in evergreen rain-forests, thorn scrub and temperate forests. ([dalvoy.com](https://www.dalvoy.com/en/upsc/ma-previous-years/2025/botany-paper-ii/forest-types-india-ecosystem-services?utm\_source=openai))

**Q84. Which one of the following is the best description of the term 'ecosystem'?**

- (a) A community of organisms interacting with one another
- (b) That part of the Earth which is inhabited by living organisms
- (c) A community of organisms together with the environment in which they live**
- (d) The flora and fauna of a geographical area

**Answer: (c)**

An ecosystem is defined as the system of biotic communities together with the abiotic environment with which they interact—both living organisms and their physical surroundings. Options (a) and (d) ignore the non-living context, while (b) refers to the broader biosphere, not a single ecological system. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Ecosystem?utm\_source=openai))

— 2014 —

**Q1. What are the significances of a practical approach to sugarcane production known as 'Sustainable Sugarcane Initiative'? 1. Seed cost is very low in this compared to the conventional method of cultivation. 2. Drip irrigation can be practiced very effectively in this. 3. There is no application of chemical/inorganic fertilizers at all in this. 4. The scope for intercropping is more in this compared to the conventional method of cultivation. Select the correct answer using the code given below:**

- (a) 1 and 3 only
- (b) 1, 2 and 4 only**
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

**Answer: (b)**

Under the Sustainable Sugarcane Initiative (SSI) fewer seedlings are planted at wider spacing, so seed cost drops sharply; the wide rows make drip irrigation and inter-cropping easier. SSI promotes judicious—often organic—use of nutrients but does not ban chemical / inorganic fertilisers altogether, so statement 3 is wrong. Therefore statements 1, 2 and 4 are correct (option b). ([testbook.com](https://testbook.com/question-answer/what-are-the-significances-of-a-practical-approach--5f4c926d948e87151de1d76e?utm\_source=openai))

**Q2. If a wetland of international importance is brought under the 'Montreux Record', what does it imply?**

- (a) Changes in ecological character have occurred, are occurring or are likely to occur in the wetland as a result of human interference**
- (b) The country in which the wetland is located should enact a law to prohibit any human activity within five kilometres from the edge of the wetland
- (c) The survival of the wetland depends on the cultural practices and traditions of certain communities living in its vicinity and therefore the cultural diversity therein should not be destroyed
- (d) It is given the status of 'World Heritage Site'

**Answer: (a)**

The Montreux Record is a register of Ramsar wetlands where changes in ecological character have occurred, are occurring, or are likely because of human interference. It is a warning/rehabilitation list, not a World Heritage listing nor does it impose buffer-zone laws or cultural conditions. Hence option (a) is correct. ([testbook.com](https://testbook.com/question-answer/if-a-wetland-of-international-importance-is-brough--5f4c9373880fa80d12c34b08?utm\_source=openai))

**Q5. With reference to Bombay Natural History Society (BNHS), consider the following statements: 1. It is an autonomous organization under the Ministry of Environment and Forests. 2. It strives to conserve nature through action-based research, education and public awareness. 3. It organizes and conducts nature trails and camps for the general public. Which of the statements given above is/are correct?**

- (a) 1 and 3 only
- (b) 2 only
- (c) 2 and 3 only**
- (d) 1, 2 and 3

**Answer: (c)**

BNHS is a non-governmental, independent society and therefore not an autonomous body under the Ministry of Environment, Forest & Climate Change, so statement 1 is incorrect. Its mission explicitly includes conservation through research, education and awareness, and it regularly conducts public nature trails and camps; hence statements 2 and 3 are correct. Therefore only 2 and 3 are correct (option c). ([en.wikipedia.org](https://en.wikipedia.org/wiki/Bombay\_Natural\_History\_Society?utm\_source=openai))

**Q6. With reference to 'Global Environment Facility', which of the following statements is/are correct?**

- (a) It serves as financial mechanism for 'Convention on Biological Diversity' and 'United Nations Framework Convention on Climate Change'**
- (b) It undertakes scientific research on environmental issues at global level
- (c) It is an agency under OECD to facilitate the transfer of technology and funds to underdeveloped countries with specific aim to protect their environment
- (d) Both (a) and (b)

**Answer: (a)**

The Global Environment Facility (GEF) is the designated financial mechanism for several multilateral environmental agreements, including the Convention on Biological Diversity and the UN Framework Convention on Climate Change, making statement (a) correct. It finances projects but is not itself a scientific-research body, nor is it an OECD agency; thus the other descriptions are wrong. Hence only option (a) is correct. ([unep.org](https://www.unep.org/about-un-environment/funding-and-partnerships/global-environment-facility?utm\_source=openai))

**Q9. Consider the following pairs :**

1. Dampa Tiger Reserve : Mizoram
2. Gumti Wildlife Sanctuary : Sikkim
3. Saramati Peak : Nagaland

**Which of the above pairs is/are correctly matched?**

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only**
- (d) 1, 2 and 3

---

**Answer: (c)**

Dampa Tiger Reserve is situated in Mizoram and Mount Saramati is the highest peak of Nagaland, so pairs 1 and 3 are correct. Gumti Wildlife Sanctuary lies in Tripura, not Sikkim, so pair 2 is incorrect. Therefore the correctly matched pairs are 1 and 3 only (option c).

([en.wikipedia.org](https://en.wikipedia.org/wiki/Dampa\_Tiger\_Reserve?utm\_source=openai))

**Q10. With reference to a conservation organization called 'Wetlands International', which of the following statements is/are correct?**

1. It is an intergovernmental organization formed by the countries which are signatories to Ramsar Convention.
2. It works at the field level to develop and mobilize knowledge, and use the practical experience to advocate for better policies.

**Select the correct answer using the code given below.**

- (a) 1 only
- (b) 2 only**
- (c) Both 1 and 2
- (d) Neither 1 nor 2

---

**Answer: (b)**

Wetlands International is an independent global non-governmental organization and one of the International Organization Partners (IOPs) of the Ramsar Convention; it is NOT an inter-governmental body created by Ramsar signatories, so Statement 1 is incorrect. The organisation undertakes field projects, generates knowledge and then uses that practical experience to lobby for improved wetland policies, making Statement 2 correct.

([wetlands.org](https://www.wetlands.org/wetlands/ramsar-convention/?utm\_source=openai))

**Q14. Other than poaching, what are the possible reasons for the decline in the population of Ganges River Dolphins?**

1. Construction of dams and barrages on rivers
2. Increase in the population of crocodiles in rivers
3. Getting trapped in fishing nets accidentally
4. Use of synthetic fertilizers and other agricultural chemicals in crop-fields in the vicinity of rivers

Select the correct answer using the code given below.

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1, 3 and 4 only**
- (d) 1, 2, 3 and 4

---

**Answer: (c)**

Major non-poaching threats include: (1) dams and barrages that fragment habitat and reduce flow; (3) accidental entanglement in fishing nets; and (4) pollution from fertilisers and agro-chemicals lowering prey availability and causing toxicity. An increase in crocodile numbers is not identified by conservation agencies as a significant driver of dolphin decline. Hence 1, 3 and 4 only are correct. ([wwfindia.org](https://www.wwfindia.org/about\_wwf/priority\_species/threatened\_species/ganges\_river\_dolphin/?utm\_source=openai))

**Q16. Brominated flame retardants are used in many household products like mattresses and upholstery. Why is there some concern about their use?**

1. They are highly resistant to degradation in the environment.
2. They are able to accumulate in humans and animals.

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2**
- (d) Neither 1 nor 2

---

**Answer: (c)**

Brominated flame retardants (BFRs) are persistent organic pollutants: (1) they are chemically stable and therefore highly resistant to environmental degradation, and (2) being lipophilic, they bio-accumulate in the fatty tissues of humans and other animals. Both statements are correct, so 'Both 1 and 2' is the right choice. ([vajiramandravi.com](https://vajiramandravi.com/upsc-exam/brominated-flame-retardants-are-used-in-many-household-products-like-mattresses-and-upholstery-why-is-there-some-concern-about-their-use/?utm\_source=openai))

**Q19. Which of the following adds/add carbon dioxide to the carbon cycle on the planet Earth?**

1. Volcanic action
2. Respiration
3. Photosynthesis
4. Decay of organic matter

Select the correct answer using the code given below.

- (a) 1 and 3 only
- (b) 2 only
- (c) 1, 2 and 4 only**
- (d) 1, 2, 3 and 4

**Answer: (c)**

Carbon dioxide is added to the atmosphere by volcanic eruptions (release of magmatic CO<sub>2</sub>), respiration of living organisms, and by microbial decay of organic matter. Photosynthesis, in contrast, fixes it into biomass. Hence statements 1, 2 and 4 add CO<sub>2</sub>, whereas statement 3 does not. The correct option is '1, 2 and 4 only'. ([dalvoy.com](https://www.dalvoy.com/upsc/previous-years/2014/carbon-dioxide-sources-carbon-cycle-volcanic-respiration-decay))

**Q20. If you walk through countryside, you are likely to see some birds stalking alongside the cattle to seize the insects disturbed by their movement through grasses. Which of the following is/are such bird/birds?**

1. Painted Stork
2. Common Myna
3. Black-necked Crane

Select the correct answer using the code given below.

- (a) 1 and 2
- (b) 2 only**
- (c) 2 and 3
- (d) 3 only

**Answer: (b)**

Common Mynas are well-known opportunistic feeders that walk beside grazing cattle to snatch insects disturbed in the grass, so statement 2 is correct. Painted Storks are large wading birds that forage mainly in wetlands for fish, not in pastures with livestock, and Black-necked Cranes occur in high-altitude marshes of Ladakh/Arunachal rather than open countryside with cattle; therefore statements 1 and 3 are incorrect. Hence only 2 is true. ([educemy.com](https://educemy.com/blog/upsc-prelims-2014-question-20/?utm\_source=openai))

**Q24. Which of the following are some important pollutants released by steel industry in India?**

1. Oxides of sulphur
2. Oxides of nitrogen
3. Carbon monoxide
4. Carbon dioxide

Select the correct answer using the code given below.

- (a) 1, 3 and 4 only
- (b) 2 and 3 only
- (c) 1 and 4 only
- (d) 1, 2, 3 and 4**

---

**Answer: (d)**

Coke-fired blast furnaces and sintering units in steel plants emit sulphur oxides (from sulphur in coal/ore), nitrogen oxides (from high-temperature combustion), carbon monoxide (incomplete combustion and reduction reactions) and large volumes of carbon dioxide (complete combustion of carbon). All four listed gases are therefore significant pollutants from the steel industry, so option (d) including 1-4 is correct. ([edukemy.com](https://edukemy.com/upsc-current-affairs/daily-current-affairs/indias-steel-sector/05-01-2024?utm\_source=openai))

**Q26. Every year, a month-long ecologically important campaign/festival is held during which certain communities/tribes plant saplings of fruit-bearing trees. Which of the following are such communities/tribes?**

- (a) Bhutia and Lepcha
- (b) Gond and Korku**
- (c) Irula and Toda
- (d) Sahariya and Agariya

---

**Answer: (b)**

The Gond and Korku tribes of Madhya Pradesh hold the month-long 'Hari Jiroti' festival during the monsoon, in which communities plant thousands of saplings of fruit-bearing trees as a cultural-ecological ritual. Such a tree-planting campaign is not recorded for the Bhutia-Lepcha, Irula-Toda or Sahariya-Agariya pairs. ([testbook.com](https://testbook.com/question-answer/every-year-a-monthlong-ecologically-important-cam--5f4c9f1d799db30d13064a69?utm\_source=openai))

**Q41. Which of the following have coral reefs?**

1. Andaman and Nicobar Islands
2. Gulf of Kachchh
3. Gulf of Mannar
4. Sunderbans

Select the correct answer using the code given below.

**(a) 1, 2 and 3 only**

(b) 2 and 4 only

(c) 1 and 3 only

(d) 1, 2, 3 and 4

---

**Answer: (a)**

Well-developed reefs occur around the Andaman & Nicobar Islands, in the Gulf of Kachchh and in the Gulf of Mannar; high turbidity and fresh-water influx prevent reef formation in the Sunderbans. Therefore 1, 2 and 3 only is correct, eliminating any choice that includes 4. ([aiduva.com](https://aiduva.com/upsc/coral-reefs-in-dia-locations-andaman-mannar-kachchh-prelims-2014/?utm\_source=openai))

**Q50. The most important strategy for the conservation of biodiversity together with traditional human life is the establishment of**

**(a) biosphere reserves**

(b) botanical gardens

(c) national parks

(d) wildlife sanctuaries

---

**Answer: (a)**

Biosphere reserves are specifically designed under UNESCO's Man and Biosphere Programme to combine in-situ conservation with the continued presence and sustainable livelihood of traditional human communities through the core–buffer–transition zonation scheme. National parks and wildlife sanctuaries generally restrict permanent human settlement, while botanical gardens are ex-situ facilities, so they cannot meet the stated dual objective. ([aspireias.com](https://www.aspireias.com/upsc-related-facts-and-data/Biosphere-Reserves-and-their-significance-UPSC-Exam?utm\_source=openai))

**Q53. The scientific view is that the increase in global temperature should not exceed 2 °C above the pre-industrial level. If the global temperature increases beyond 3 °C above the pre-industrial level, what can be its possible impact/impacts on the world?**

1. Terrestrial biosphere tends toward a net carbon source.
2. Widespread coral mortality will occur.
3. All the global wetlands will permanently disappear.
4. Cultivation of cereals will not be possible anywhere in the world.

Select the correct answer using the code given below.

- (a) 1 only  
**(b) 1 and 2 only**  
(c) 2, 3 and 4 only  
(d) 1, 2, 3 and 4

---

**Answer: (b)**

IPCC assessments project that warming above about 3 °C would likely turn the terrestrial biosphere from a net carbon sink to a net carbon source and trigger large-scale coral bleaching and mortality. However, total permanent disappearance of all wetlands and the absolute impossibility of cereal cultivation worldwide are not supported by scientific evidence. Hence only statements 1 and 2 are correct. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2014-question-paper-with-answer-key-general-studies-paper-1/?utm\_source=openai))

**Q56. What are the benefits of implementing the 'Integrated Watershed Development Programme'?**

1. Prevention of soil runoff
2. Linking the country's perennial rivers with seasonal rivers
3. Rainwater harvesting and recharge of groundwater table
4. Regeneration of natural vegetation

Select the correct answer using the code given below.

- (a) 1 and 2 only  
(b) 2, 3 and 4 only  
**(c) 1, 3 and 4 only**  
(d) 1, 2, 3 and 4

---

**Answer: (c)**

The Integrated Watershed Management/Development Programme aims to (1) prevent soil run-off, (3) harvest rainwater and recharge groundwater, and (4) regenerate natural vegetation on degraded lands. It has no mandate to link perennial and seasonal rivers; that is part of the separate inter-basin river-linking project. Therefore only 1, 3 and 4 are correct. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2014-question-56/?utm\_source=openai))

**Q64. With reference to Neem tree, consider the following statements:**

1. Neem oil can be used as a pesticide to control the proliferation of some species of insects and mites.
2. Neem seeds are used in the manufacture of biofuels and hospital detergents.
3. Neem oil has applications in pharmaceutical industry.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 3 only
- (c) 1 and 3 only**
- (d) 1, 2 and 3

---

**Answer: (c)**

Neem oil contains azadirachtin and is widely used as an organic pesticide against insects and mites, and its pharmacological properties give it applications in the pharmaceutical/cosmetics industry—so statements 1 and 3 are correct. Although neem oil can be trans-esterified into biodiesel, the UPSC key treats the claim that 'neem seeds are used in the manufacture of biofuels and hospital detergents' as incorrect, making statement 2 wrong.

([educemy.com](https://educemy.com/blog/upsc-prelims-2014-question-64/?utm\_source=openai))

**Q95. With reference to 'Eco-Sensitive Zones', which of the following statements is/are correct?**

1. Eco-Sensitive Zones are the areas that are declared under the Wildlife (Protection) Act, 1972.
2. The purpose of the declaration of Eco-Sensitive Zones is to prohibit all kinds of human activities in those zones except agriculture.

**Select the correct answer using the code given below.**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2**

---

**Answer: (d)**

Eco-Sensitive Zones are notified by the Ministry of Environment, Forest & Climate Change under Section 3 of the Environment (Protection) Act 1986, not under the Wildlife (Protection) Act 1972, so statement 1 is wrong. Their objective is to regulate and manage (not totally prohibit) activities; several activities including agriculture, horticulture, organic farming, eco-tourism, etc. are expressly permitted, so statement 2 is also wrong. Hence neither statement is correct.

([educemy.com](https://educemy.com/blog/upsc-prelims-2014-question-95/))

**Q96. Consider the following statements :**

1. Animal Welfare Board of India is established under the Environment (Protection) Act, 1986.
2. National Tiger Conservation Authority is a statutory body.
3. National Ganga River Basin Authority is chaired by the Prime Minister.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3 only**
- (c) 2 only
- (d) 1, 2 and 3

---

**Answer: (b)**

The Animal Welfare Board of India was set up in 1962 under Section 4 of the Prevention of Cruelty to Animals Act 1960, not under the Environment (Protection) Act 1986; thus statement 1 is false. The National Tiger Conservation Authority is a statutory body constituted under Section 38L of the Wildlife (Protection) Act 1972 (as amended in 2006), so statement 2 is true. The National Ganga River Basin Authority was constituted under the Environment Protection Act 1986 and is chaired by the Prime Minister, so statement 3 is true. Therefore only statements 2 and 3 are correct.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Animal\_Welfare\_Board\_of\_India))

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**Q7. Consider the following:**

1. Star tortoise
2. Monitor lizard
3. Pygmy hog
4. Spider monkey

Which of the above are naturally found in India?

- (a) 1, 2 and 3 only**
- (b) 2 and 3 only
- (c) 1 and 4 only
- (d) 1, 2, 3 and 4

---

**Answer: (a)**

The Indian star tortoise (*Geochelone elegans*), several monitor lizard species (e.g., *Varanus bengalensis*) and the critically endangered pygmy hog (*Porcula salvania*) are native to India. Spider monkeys (genus *Ateles*) are confined to Central and South America and are absent from India. Thus 1, 2 and 3 only are naturally found in India! option (a).

([edukemy.com](https://edukemy.com/blog/upsc-prelims-2013-question-57/?utm\_source=openai))

**Q8. Which of the following can be found as pollutants in the drinking water in some parts of India?**

1. Arsenic
2. Sorbitol
3. Fluoride
4. Formaldehyde
5. Uranium

Select the correct answer using the codes given below.

- (a) 1 and 3 only  
(b) 2, 4 and 5 only  
**(c) 1, 3 and 5 only**  
(d) 1, 2, 3, 4 and 5

**Answer: (c)**

Chronic arsenic contamination affects groundwater in parts of West Bengal, Bihar and Assam; excess fluoride occurs in Rajasthan, Andhra Pradesh and other regions; and naturally occurring uranium above permissible limits has been reported from aquifers in Punjab and Rajasthan. Sorbitol (a sugar alcohol) and formaldehyde are not documented as widespread drinking-water pollutants in India. Hence statements 1, 3 and 5 are correct! option (c). ([[edukemy.com](https://www.edukemy.com)]([https://www.edukemy.com/blog/upsc-prelims-2013-question-60/?utm\\_source=openai](https://www.edukemy.com/blog/upsc-prelims-2013-question-60/?utm_source=openai)))

**Q10. Consider the following animals:**

1. Sea cow
2. Sea horse
3. Sea lion

Which of the above is/are mammal/mammals?

- (a) 1 only  
**(b) 1 and 3 only**  
(c) 2 and 3 only  
(d) 1, 2 and 3

**Answer: (b)**

Sea cow (dugong/manatee) and sea lion are both air-breathing, milk-producing marine mammals, whereas the sea horse is a bony fish; hence only 1 and 3 are mammals. ([[edukemy.com](https://www.edukemy.com)]([https://www.edukemy.com/blog/upsc-prelims-2013-question-60/?utm\\_source=openai](https://www.edukemy.com/blog/upsc-prelims-2013-question-60/?utm_source=openai)))

**Q17. Consider the following pairs:**

1. Nokrek Biosphere Reserve : Garo Hills

2. Loktak Lake : Barail Range

3. Namdapha National Park : Dafla Hills

Which of the above pairs is/are correctly matched?

(a) 1 only

(b) 2 and 3 only

(c) 1, 2 and 3

(d) None

---

**Answer: (a)**

Nokrek Biosphere Reserve is correctly located in the Garo Hills of Meghalaya. Loktak Lake lies in Manipur, not the Barail Range of Assam, and Namdapha National Park is in the Changlang district of Arunachal Pradesh rather than the Dafla Hills; therefore only Pair 1 is right.

([educemy.com](https://educemy.com/blog/upsc-prelims-2013-question-67/?utm\_source=openai))

**Q22. In the grasslands, trees do not replace the grasses as a part of an ecological succession because of**

(a) insects and fungi

(b) limited sunlight and paucity of nutrients

(c) water limits and fire

(d) None of the above

---

**Answer: (c)**

In grasslands, scarce soil moisture and the regular occurrence of fires kill tree seedlings before they can establish, preventing replacement of grasses; therefore the key limiting factors are water deficit and fire. Insects, fungi, nutrient or light shortages are not the primary reasons in this biome.

([compass.rauias.com](https://compass.rauias.com/upsc-prelims/environment-pyq/?utm\_source=openai))

**Q23. Which one of the following is the correct sequence of ecosystems in the order of decreasing productivity?**

(a) Oceans, lakes, grasslands, mangroves

(b) Mangroves, oceans, grasslands, lakes

(c) Mangroves, grasslands, lakes, oceans

(d) Oceans, mangroves, lakes, grasslands

---

**Answer: (c)**

Net primary productivity per unit area is highest in nutrient-rich, shallow mangrove/estuarine systems, followed by grasslands, then most lakes, and is lowest in open oceans which are nutrient-poor 'biological deserts'. Hence the decreasing order is Mangroves > Grasslands > Lakes > Oceans. Other sequences mis-place oceans or lakes.

([aiduva.com](https://aiduva.com/upsc/ecosystem-productivity-sequence-oceans-mangroves-prelims-2013))

**Q29. Due to improper/indiscriminate disposal of old and used computers or their parts, which of the following are released into the environment as e-waste?**

1. Beryllium
2. Cadmium
3. Chromium
4. Heptachlor
5. Mercury
6. Lead
7. Plutonium

Select the correct answer using the codes given below:

- (a) 1, 3, 4, 6 and 7 only
- (b) 1, 2, 3, 5 and 6 only**
- (c) 2, 4, 5 and 7 only
- (d) 1, 2, 3, 4, 5, 6 and 7

---

**Answer: (b)**

Discarded computers release several toxic metals: beryllium (mother-boards), cadmium (Ni-Cd batteries), chromium (hexavalent surface coatings), mercury (switches, LCDs) and lead (solder). Heptachlor is a pesticide, and plutonium is radioactive material not used in electronic hardware; therefore the correct set is 1, 2, 3, 5 and 6, i.e. option (b). ([mrunal.org](https://mrunal.org/2013/06/answerkey-csat-2013-environment-biodiversity-enb-questions-solved-with-explanation-reference-all-four-sets-abcd.html?utm\_source=openai))

**Q30. Acid rain is caused by the pollution of environment by**

- (a) carbon dioxide and nitrogen
- (b) carbon monoxide and carbon dioxide
- (c) ozone and carbon dioxide
- (d) nitrous oxide and sulphur dioxide**

---

**Answer: (d)**

Acid rain forms when sulphur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>—including nitrous from anthropogenic sources react with atmospheric moisture to produce sulphuric and nitric acids; hence the pollutants responsible are sulphur dioxide and nitrous oxide, making option (d) correct. Other options list gases (CO, CO<sub>2</sub>, O<sub>3</sub>) that do not produce strong acids on dissolution in rainwater. ([licchavilyceum.com/upsc-prelims-2013-question-paper-solved/?utm\_source=openai])

**Q31. With reference to food chains in ecosystems, consider the following statements:**

1. A food chain illustrates the order in which a chain of organisms feed upon each other.
2. Food chains are found within the populations of a species.
3. A food chain illustrates the numbers of each organism which are eaten by others.

**Which of the statements given above is/are correct?**

**(a) 1 only**

(b) 1 and 2 only

(c) 1, 2 and 3

(d) None

---

**Answer: (a)**

Statement 1 is true because a food chain is a linear sequence showing the order in which organisms feed on one another (producer → primary consumer → secondary consumer, etc.). Statements 2 and 3 are false because food chains link different species in a community, not members of the same population, and they do not depict the numbers of organisms (that is shown by pyramids of numbers/biomass). Therefore only statement 1 is correct. ([licchavilyceum.com](https://licchavilyceum.com/upsc-prelims-2013-question-paper-solved/?utm\_source=openai))

**Q32. Consider the following pairs:**

**National Park : River flowing through the Park**

1. Corbett National Park : Ganga
2. Kaziranga National Park : Manas
3. Silent Valley National Park : Kaveri

**Which of the above pairs is/are correctly matched?**

(a) 1 and 2

(b) 3 only

(c) 1 and 3

**(d) None**

---

**Answer: (d)**

None of the given park–river pairs is right: Jim Corbett NP is traversed by the Ramganga (a tributary of the Ganga, not the main Ganga); Kaziranga NP lies along the Brahmaputra, not the Manas; Silent Valley NP is drained by the Kunthipuzha (a tributary of Bharathappuzha), not the Kaveri. Hence option (d) 'None' is correct. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2013-question-82/?utm\_source=openai))

**Q33. Consider the following organisms:**

1. Agaricus
2. Nostoc
3. Spirogyra

**Which of the above is/are used as biofertilizer/biofertilizers?**

- (a) 1 and 2
- (b) 2 only**
- (c) 2 and 3
- (d) 3 only

---

**Answer: (b)**

Nostoc is a nitrogen-fixing cyanobacterium widely used as a biofertilizer in paddy fields. Agaricus is an edible mushroom with no nitrogen-fixing ability, and Spirogyra is a green alga not employed as a biofertilizer. Therefore only organism 2 qualifies, making option (b) correct.

([educemy.com](https://educemy.com/blog/upsc-prelims-2013-question-83/?utm\_source=openai))

**Q34. Which of the following adds/add nitrogen to the soil?**

1. Excretion of urea by animals
2. Burning of coal by man
3. Death of vegetation

**Select the correct answer using the codes given below.**

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only**
- (d) 1, 2 and 3

---

**Answer: (c)**

Nitrogen enters soil when animals excrete urea (which soil microbes hydrolyse to ammonia and then nitrates) and when vegetation dies and decomposes, returning organic nitrogen to the soil. Burning coal emits mainly CO<sub>2</sub>, SO<sub>2</sub>, and particulates; it does not directly contribute bioavailable nitrogen. Statement 2 is incorrect. Thus statements 1 and 3 only are correct (option c).

([educemy.com](https://educemy.com/blog/upsc-prelims-2013-question-84/?utm\_source=openai))

**Q35. In which of the following States is lion-tailed macaque found in its natural habitat?**

1. Tamil Nadu
2. Kerala
3. Karnataka
4. Andhra Pradesh

Select the correct answer using the codes given below.

**(a) 1, 2 and 3 only**

(b) 2 only

(c) 1, 3 and 4 only

(d) 1, 2, 3 and 4

---

**Answer: (a)**

The lion-tailed macaque (*Macaca silenus*) is endemic to the wet evergreen forests of the Western Ghats and occurs naturally in Tamil Nadu, Kerala and Karnataka, but not in Andhra Pradesh. Hence statements 1, 2 and 3 are correct while 4 is incorrect, making option (a) the right choice. ([cambridge.org](https://www.cambridge.org/core/journals/oryx/article/decline-of-the-endangered-liontailed-macaque-macaca-silenus-in-the-western-ghats-india/9DB9A593D828F129CEAE693D04F2F69B?utm\_source=openai))

**Q48. Which one of the following terms describes not only the physical space occupied by an organism, but also its functional role in the community of organisms?**

(a) Ecotone

**(b) Ecological niche**

(c) Habitat

(d) Home range

---

**Answer: (b)**

The ecological niche includes both the physical space an organism occupies and its functional role (resource use, interactions, trophic position) within the community; none of the other terms encompass both aspects.

**Q49. Photochemical smog is a resultant of the reaction among**

**(a)  $\text{NO}_x$ ,  $\text{O}_3$  and peroxyacetyl nitrate in the presence of sunlight**

(b)  $\text{CO}$ ,  $\text{O}_3$  and peroxyacetyl nitrate in the presence of sunlight

(c)  $\text{CO}$ ,  $\text{CO}_2$  and  $\text{NO}_x$  at low temperature

(d) high concentration of  $\text{NO}_x$ ,  $\text{O}_3$  and  $\text{CO}$  in the evening

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**Answer: (a)**

Photochemical smog forms when nitrogen dioxide ( $\text{NO}_x$ ) reacts under intense sunlight with carbon monoxide ( $\text{CO}$ ) and secondary pollutants like peroxyacetyl nitrate (PAN); their simultaneous presence defines the smog variety, matching Option (a). Carbon monoxide or low-temperature conditions are not defining reactants for photochemical smog.

**Q53. With reference to the food chains in ecosystems, which of the following kinds of organism is/are known as decomposer organism/organisms?**

1. Virus
2. Fungi
3. Bacteria

Select the correct answer using the codes given below.

- (a) 1 only  
(b) 2 and 3 only  
(c) 1 and 3 only  
(d) 1, 2 and 3

---

**Answer: (b)**

Decomposers are chiefly saprophytic bacteria and fungi that break down organic matter; viruses are obligate intracellular parasites and do not perform saprophytic decomposition. Hence only statements 2 and 3 are correct (option b).

([edukemy.com](https://edukemy.com/blog/upsc-prelims-2013-question-3/?utm\_source=openai))

**Q55. Which of the following is/are unique characteristic/characteristics of equatorial forests?**

1. Presence of tall, closely set trees with crowns forming a continuous canopy
2. Coexistence of a large number of species
3. Presence of numerous varieties of epiphytes

Select the correct answer using the codes given below.

- (a) 1 only  
(b) 2 and 3 only  
(c) 1 and 3 only  
(d) 1, 2 and 3

---

**Answer: (d)**

All three statements describe classic features of equatorial (tropical-rain) forests: (1) very tall, densely spaced trees whose interlocking crowns create an almost unbroken canopy; (2) extremely high biodiversity with many species co-existing; and (3) abundant epiphytes such as orchids and ferns that grow on tree trunks and branches. Hence 1, 2 and 3 are correct. ([aiduva.com](https://aiduva.com/upsc/equatorial-forests-characteristics-canopy-epiphytes-prelims-2013/?utm\_source=openai))

**Q87. Consider the following fauna of India:**

1. Gharial
2. Leatherback turtle
3. Swamp deer

**Which of the above is/are endangered?**

- (a) 1 and 2 only
- (b) 3 only
- (c) 1, 2 and 3**
- (d) None

---

**Answer: (c)**

The gharial is listed as Critically Endangered, the leatherback turtle as Endangered in Indian waters, and the swamp deer (barasingha) as Vulnerable; UPSC treated all three threatened categories as 'endangered' for the purpose of the question. Consequently the official key marks option (c) (1, 2 and 3) correct. ([dailyo.in](https://www.dailyo.in/amp/variety/upsc-civil-services-exam-prelims-mains-answer-key-general-studies-ambiguous-questions-18680?utm\_source=openai))

**Q94. Which of the following leaf modifications occurs/occur in desert areas to inhibit water loss?**

1. Hard and waxy leaves
2. Tiny leaves or no leaves
3. Thorns instead of leaves

**Select the correct answer using the codes given below.**

- (a) 1 and 2 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 1, 2 and 3**

---

**Answer: (d)**

Xerophytic plants reduce transpiration by developing hard, thick, wax-coated leaves, by shrinking foliage to tiny scales or shedding it altogether, and by converting leaves into spines (thorns); all three adaptations minimise surface area and cuticular water loss in arid deserts. Hence each of statements 1, 2 and 3 is correct. ([edukemy.com](https://edukemy.com/blog/upsc-prelims-2013-question-44/?utm\_source=openai))

**Q97. Mycorrhizal biotechnology has been used in rehabilitating degraded sites because mycorrhiza enables the plants to**

1. resist drought and increase absorptive area
2. tolerate extremes of pH
3. resist disease infestation

Select the correct answer using the codes given below:

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3**

---

**Answer: (d)**

Mycorrhizal fungi extend a plant's root system, improving water and nutrient uptake (helping drought resistance); they buffer plants against extreme soil pH, and they out-compete or inhibit soil pathogens, reducing disease. Thus all three statements are true and option (d) is correct. ([aiduva.com](https://aiduva.com/upsc/mycorrhizal-biotechnology-drought-tolerance-prelims-2013/?utm\_source=openai))

— 2012 —

**Q3. How does National Biodiversity Authority (NBA) help in protecting the Indian agriculture?**

1. NBA checks the biopiracy and protects the indigenous and traditional genetic resources.
2. NBA directly monitors and supervises the scientific research on genetic modification of crop plants.
3. Application for Intellectual Property Rights related to genetic/biological resources cannot be made without the approval of NBA.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only**
- (d) 1, 2 and 3

---

**Answer: (c)**

Under the Biological Diversity Act, the NBA (i) checks biopiracy and safeguards indigenous genetic resources, and (iii) must clear any IPR applications based on India's biological resources. Direct oversight of GM crop research rests with the Genetic Engineering Appraisal Committee, not the NBA, so statement 2 is wrong. ([jagranjosh.com](https://www.jagranjosh.com/articles/uppcs-preliminary-exam-2012-gs-paperi-practice-set-1338289077-1))

**Q4. The National Green Tribunal Act, 2010 was enacted in consonance with which of the following provisions of the Constitution of India?**

1. Right to healthy environment, construed as a part of Right to life under Article 21
2. Provision of grants for raising the level of administration in the Scheduled Areas for the welfare of Scheduled Tribes under Article 275(1)
3. Powers and functions of Gram Sabha as mentioned under Article 243(A)

Select the correct answer using the codes given below:

- (a) 1 only  
(b) 2 and 3 only  
(c) 1 and 3 only  
(d) 1, 2 and 3

---

**Answer: (a)**

The NGT Act derives legitimacy chiefly from Article 21, whose judicial interpretation includes the right to a healthy environment. Articles 275(1) (grants for Scheduled Areas) and 243-A (Gram Sabha powers) are unrelated to the Act's establishment, so only statement 1 is correct. ([jagranjosh.com](https://www.jagranjosh.com/articles/uppcs-preliminary-exam-2012-gs-paperi-practice-set-1338289077-1))

**Q5. If National Water Mission is properly and completely implemented, how will it impact the country?**

1. Part of the water needs of urban areas will be met through recycling of waste-water.
2. The water requirements of coastal cities with inadequate alternative sources of water will be met by adopting appropriate technologies that allow for the use of ocean water.
3. All the rivers of Himalayan origin will be linked to the rivers of peninsular India.
4. The expenses incurred by farmers for digging bore-wells and for installing motors and pump-sets to draw ground-water will be completely reimbursed by the Government.

Select the correct answer using the codes given below:

- (a) 1 only  
(b) 1 and 2 only  
(c) 3 and 4 only  
(d) 1, 2, 3 and 4

---

**Answer: (b)**

The National Water Mission document explicitly states that (1) a considerable share of urban water demand should come from recycling of wastewater and (2) coastal cities lacking other sources should meet their needs through new desalination technologies that use ocean water. River-linking and government reimbursement of bore-well costs are nowhere envisaged, so statements 3 and 4 are incorrect. Hence only 1 and 2 are correct. ([nwm.gov.in](https://nwm.gov.in/objective-national-water-mission?utm\_source=openai))

**Q11. Consider the following kinds of organisms :**

1. Bacteria
2. Fungi
3. Flowering plants

**Some species of which of the above kinds of organisms are employed as biopesticides?**

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3**

---

**Answer: (d)**

Biopesticides are derived from living organisms: bacteria such as *Bacillus thuringiensis*, fungi like *Beauveria bassiana*/*Trichoderma* spp., and plant products such as neem or pyrethrum obtained from flowering plants. Therefore species of all three groups—bacteria, fungi and flowering plants—are used. ([testbook.com](https://testbook.com/question-answer/consider-the-following-kinds-of-organisms1-bac--601be1f67ba776e88a4be00e?utm\_source=openai))

**Q12. Biomass gasification is considered to be one of the sustainable solutions to the power crisis in India. In this context, which of the following statements is/are correct?**

1. Coconut shells, groundnut shells and rice husk can be used in biomass gasification.
2. The combustible gases generated from biomass gasification consist of hydrogen and carbon-dioxide only.
3. The combustible gases generated from biomass gasification can be used for direct heat generation but not in internal combustion engines.

**Select the correct answer using the codes given below :**

- (a) 1 only**
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

---

**Answer: (a)**

Agricultural residues such as coconut shells, ground-nut shells and rice husk are common feed-stocks for biomass gasifiers, so statement 1 is correct. Producer gas contains CO, H<sub>2</sub>, CH<sub>4</sub>, and some H<sub>2</sub> and CO<sub>2</sub>, making statement 2 incorrect. After cleaning, producer gas can run internal engines; hence statement 3 is also incorrect. Thus only statement 1 is valid. ([studyadda.com](https://www.studyadda.com/solved-papers/solved-paper-general-studies-2012\_q76/772/355617?utm\_source=openai))

**Q15. Lead, ingested or inhaled, is a health hazard. After the addition of lead to petrol has been banned, what still are the sources of lead poisoning?**

1. Smelting units
2. Pens and pencils
3. Paints
4. Hair oils and cosmetics

Select the correct answer using the codes given below :

- (a) 1, 2 and 3 only  
(b) 1 and 3 only  
(c) 2 and 4 only  
(d) 1, 2, 3 and 4

---

**Answer: (b)**

After leaded petrol was phased out, major anthropogenic lead sources remain: (1) smelting/recycling of lead-acid batteries and other ores, and (3) architectural and industrial paints that still use lead-based pigments. Graphite 'lead' in pencils and modern pens contain no elemental lead, while lead compounds are now banned from hair oils/cosmetics in India, so statements 2 and 4 are not accepted.

([rishiupsc.com](https://rishiupsc.com/2012-prelims-question-paper-with-answers/))

**Q17. Consider the following statements:**

**Chlorofluorocarbons, known as ozone-depleting substances, are used**

1. in the production of plastic foams
2. in the production of tubeless tyres
3. in cleaning certain electronic components
4. as pressurizing agents in aerosol cans

Which of the statements given above is/are correct?

- (a) 1, 2 and 3 only  
(b) 4 only  
(c) 1, 3 and 4 only  
(d) 1, 2, 3 and 4

---

**Answer: (c)**

Before the Montreal Protocol restrictions, CFCs served as (1) blowing agents for plastic foams, (3) precision cleaners for electronic components, and (4) propellants/pressurising agents in aerosol cans. They were never used in manufacturing tubeless tyres, making statement 2 incorrect; therefore statements 1, 3 and 4 alone are true. ([rishiupsc.com](https://rishiupsc.com/2012-prelims-question-paper-with-answers/))

**Q41. Government of India encourages the cultivation of 'sea buckthorn'. What is the importance of this plant?**

1. It helps in controlling soil erosion and in preventing desertification.
2. It is a rich source of biodiesel.
3. It has nutritional value and is well-adapted to live in cold areas of high altitudes.
4. Its timber is of great commercial value.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2, 3 and 4 only
- (c) 1 and 3 only**
- (d) 1, 2, 3 and 4

**Answer: (c)**

Sea-buckthorn is a shrubby leguminous plant whose deep root system binds sandy, high-altitude soils, helping control erosion and desertification; its berries and seed oil are nutritionally rich and the plant is naturally adapted to cold Himalayan deserts. It is not cultivated for timber and, while the oil has many medicinal and cosmetic uses, it is not regarded as a rich or commercial source of biodiesel. Thus only statements 1 and 3 are correct.

([licchavilyceum.com](https://licchavilyceum.com/upsc-prelims-2012-solved-paper/?utm\_source=openai))

**Q46. With reference to the wetlands of India, consider the following statements :**

1. The country's total geographical area under the category of wetlands is recorded more in Gujarat as compared to other States.
2. In India, the total geographical area of coastal wetlands is larger than that of inland wetlands.

**Which of the statements given above is/are correct?**

- (a) 1 only**
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer: (a)**

Remote-sensing inventories show Gujarat (largely because of the Great and Little Rann of Kachchh) has the largest share of India's wetland area. National Wetland Atlas data also reveal that about 69 % of the country's wetlands are inland while only ~27 % are coastal; thus coastal wetlands are smaller in extent than inland ones. Therefore only statement 1 is correct. ([upscprep.com](https://www.upscprep.com/upsc-prelims-2012-gs-question-paper-and-answer-key/?utm\_source=openai))

**Q50. The acidification of oceans is increasing. Why is this phenomenon a cause of concern?**

1. The growth and survival of calcareous phytoplankton will be adversely affected.
2. The growth and survival of coral reefs will be adversely affected.
3. The survival of some animals that have phytoplanktonic larvae will be adversely affected.
4. The cloud seeding and formation of clouds will be adversely affected.

Which of the statements given above is/are correct?

(a) 1, 2 and 3 only

(b) 2 only

(c) 1 and 3 only

(d) 1, 2, 3 and 4

**Answer: (a)**

Ocean acidification lowers the concentration of carbonate ions needed to build  $\text{CaCO}_3$  calcifying phytoplankton (e.g., coccolithophores), coral polyps and many invertebrate larvae that pass a calcifying planktonic stage are all put at risk. Cloud forming processes depend mainly on aerosols, not on ocean pH, so statement 4 is incorrect; hence only 1, 2 and 3 are correct.

**Q87. Consider the following protected areas:**

1. Bandipur
2. Bhitarkanika
3. Manas
4. Sunderbans

Which of the above are declared Tiger Reserves?

(a) 1 and 2 only

(b) 1, 3 and 4 only

(c) 2, 3 and 4 only

(d) 1, 2, 3 and 4

**Answer: (b)**

Bandipur (Karnataka), Manas (Assam) and the Sunderbans (West Bengal) are notified Project Tiger reserves, whereas Bhitarkanika in Odisha is a crocodile sanctuary/national park but not a tiger reserve. Thus only areas 1, 3 and 4 qualify. ([onlyiasexam.com](https://www.onlyiasexam.com/2021/02/upsc-geography-prelims-questions-2012\_96.html?utm\_source=openai))

**Q90. In which one among the following categories of protected areas in India are local people NOT allowed to collect and use the biomass?**

(a) Biosphere Reserves

(b) National Parks

(c) Wetlands declared under Ramsar Convention

(d) Wildlife Sanctuaries

**Answer: (b)**

Under the Wildlife (Protection) Act, National Parks enjoy the highest level of protection—grazing, forestry, fuel-wood or any biomass extraction by local residents is prohibited unless specifically permitted by the Chief Wildlife Warden. Biosphere-reserve buffer/transition zones, Ramsar wetlands and wildlife sanctuaries can allow regulated use of resources, so only National Parks bar people from collecting biomass. ([studywrap.com](https://studywrap.com/wildlife-of-india-protected-areas-for-wildlife/?utm\_source=openai))

**Q91. Consider the following kinds of organisms:**

1. Bat
2. Bee
3. Bird

**Which of the above is/are pollinating agent/agents?**

- (a) 1 and 2 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 1, 2 and 3**

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**Answer: (d)**

All three listed organisms act as pollinators: bees are the classic insect pollinators, many birds (e.g., hummingbirds, sunbirds) effect ornithophily, and nectar-feeding bats carry out chiropterophily. Hence bat (1), bee (2) and bird (3) are all valid pollinating agents.

([britannica.com](https://www.britannica.com/science/pollination/Birds?utm\_source=openai))

**Q92. Which one of the following groups of animals belongs to the category of endangered species?**

- (a) Great Indian Bustard, Musk Deer, Red Panda and Asiatic Wild Ass**
- (b) Kashmir Stag, Cheetal, Blue Bull and Great Indian Bustard
- (c) Snow Leopard, Swamp Deer, Rhesus Monkey and Saras (Crane)
- (d) Lion-tailed Macaque, Blue Bull, Hanuman Langur and Cheetal

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**Answer: (a)**

Great Indian Bustard (Critically Endangered), Musk Deer species (Endangered), Red Panda (Endangered) and the Asiatic/Indian Wild Ass (then listed as Endangered, now Vulnerable) all fell into the IUCN 'endangered' bracket at the time of the exam; the other options include species that were vulnerable or least concern, such as Blue Bull or Hanuman Langur. Therefore option (a) is the only all-endangered grouping. ([studyadda.com](https://www.studyadda.com/solved-papers/solved-paper-general-studies-2012\_q99/772/355597?utm\_source=openai))

**Q94. The Millennium Ecosystem Assessment describes the following major categories of ecosystem services—provisioning, supporting, regulating, preserving and cultural. Which one of the following is a supporting service?**

- (a) Production of food and water
- (b) Control of climate and disease
- (c) Nutrient cycling and crop pollination**
- (d) Maintenance of diversity

---

**Answer: (c)**

Supporting services are underlying ecological functions such as nutrient cycling, soil formation and primary production that make all other ecosystem services possible. 'Nutrient cycling' (and by extension crop pollination that depends on it) is therefore classified as a supporting service, whereas food/water production is provisioning and climate control is regulating. ([studyadda.com](https://www.studyadda.com/solved-papers/solved-paper-general-studies-2012\_q69/772/355599?utm\_source=openai))

**Q96. Which of the following can be threats to the biodiversity of a geographical area?**

1. Global warming
2. Fragmentation of habitat
3. Invasion of alien species
4. Promotion of vegetarianism

Select the correct answer using the codes given below :

**(a) 1, 2 and 3 only**

(b) 2 and 3 only

(c) 1 and 4 only

(d) 1, 2, 3 and 4

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**Answer: (a)**

Global warming alters habitats, habitat fragmentation isolates populations, and invasion by alien species out-competes natives—all three are well-recognised threats to biodiversity. Merely promoting vegetarianism has no direct negative impact on biodiversity. Hence statements 1, 2 and 3 are correct.

([rishiupsc.com](https://rishiupsc.com/2012-prelims-question-paper-with-answers/))

**Q97. Consider the following :**

1. Black-necked crane
2. Cheetah
3. Flying squirrel
4. Snow leopard

Which of the above are naturally found in India?

(a) 1, 2 and 3 only

**(b) 1, 3 and 4 only**

(c) 2 and 4 only

(d) 1, 2, 3 and 4

---

**Answer: (b)**

Black-necked cranes winter in Ladakh and Arunachal Pradesh; several species of flying squirrels (e.g., Indian giant flying squirrel) occur across India; and snow leopards inhabit the high Himalaya. The Asiatic cheetah has been extinct in India since the mid-20th century, so statement 2 is wrong. Therefore only 1, 3 and 4 are naturally found. ([parikshamanthan.in](https://parikshamanthan.in/consider-the-following-i-black-necked-crane-ii-cheetah-iii-flying-squirrel-iv-snow-leopard-which-of-the-above-are-naturally-found-in-india/?utm\_source=openai))

**Q98. What is the difference between the antelopes Oryx and Chiru?**

- (a) Oryx is adapted to live in hot and arid areas whereas Chiru is adapted to live in steppes and semi-desert areas of cold high mountains
- (b) Oryx is poached for its antlers whereas Chiru is poached for its musk
- (c) Oryx exists in western India only whereas Chiru exists in north-east India only
- (d) None of the statements (a), (b) and (c) given above is correct

**Answer: (a)**

Oryx species inhabit hot arid deserts of Africa/Arabia, whereas the Tibetan antelope (Chiru) is adapted to cold, high-altitude steppes and semi-deserts of the Tibetan Plateau and Ladakh. The other two statements are incorrect—Oryx are hunted mainly for meat/hide (not musk or antlers) and neither species is endemic to the Indian regions mentioned. ([gokulamseekias.com](https://gokulamseekias.com/prelims-c-a/environment/karakoram-wildlife-sanctuary/?utm\_source=openai))

**Q99. What would happen if phytoplankton of an ocean is completely destroyed for some reason?**

1. The ocean as a carbon sink would be adversely affected.
2. The food chains in the ocean would be adversely affected.
3. The density of ocean water would drastically decrease.

Select the correct answer using the codes given below :

- (a) 1 and 2 only
- (b) 2 only
- (c) 3 only
- (d) 1, 2 and 3

**Answer: (a)**

Phytoplankton perform the majority of oceanic photosynthesis, sequestering CO<sub>2</sub>; their role as a carbon sink. They form the base of marine food webs, so food chains would collapse. Their biomass is too small to appreciably change seawater density, so statement 3 is incorrect. Hence only 1 and 2 are correct. ([satheessc.iitk.ac.in](https://satheessc.iitk.ac.in/sathee-ssc/student-corner/practice-set/ssc\_general\_studies\_pq/general\_studies\_ques\_71/?utm\_source=openai))

**Q100. Vultures, which used to be very common in Indian countryside some years ago, are rarely seen nowadays. This is attributed to**

- (a) the destruction of their nesting sites by new invasive species
- (b) a drug used by cattle owners for treating their diseased cattle
- (c) scarcity of food available to them
- (d) a widespread, persistent and fatal disease among them

**Answer: (b)**

Indian vulture populations crashed (>95%) after the 1990s because livestock carcasses contained the veterinary NSAID diclofenac, which causes fatal visceral gout and kidney failure in vultures. Habitat loss or food scarcity (options a, c) and any specific vulture epidemic (d) have not been shown to be the primary nationwide cause. ([timesofindia.indiatimes.com](https://timesofindia.indiatimes.com/home/environment/flora-fauna/99-per-cent-crash-in-vulture-population-reported-by-bombay-natural-history-society/articleshow/16806489.cms?utm\_source=openai))

UPSC 2011

Environment & Ecology › Renewable Energy & Green Technologies

moderate

**Q1. In the Union Budget 2011-12, a full exemption from the basic customs duty was extended to the bio-based asphalt (bioasphalt). What is the importance of this material?**

1. Unlike traditional asphalt, bio-asphalt is not based on fossil fuels.
2. Bioasphalt can be made from non-renewable resources.
3. Bioasphalt can be made from organic waste materials.
4. It is eco-friendly to use bioasphalt for surfacing of the roads.

Which of the statements given above are correct?

- (a) 1, 2 and 3 only  
(b) 1, 3 and 4 only  
(c) 2 and 4 only  
(d) 1, 2, 3 and 4

**Answer: (b)**

Bio-asphalt is produced from renewable, plant- or waste-based feed-stocks, so it is not based on fossil fuels (statement 1) and can be made from organic waste materials (statement 3). Its renewable origin and lower life-cycle emissions make it eco-friendly for road surfacing (statement 4). However, it is specifically valued because it avoids non-renewable resources, so statement 2 is incorrect.

Therefore only 1, 3 and 4 are correct! option (b). ([aspireias.com](https://www.aspireias.com/en/real-study-10years-paper/2011?utm\_source=openai))

UPSC 2011

Environment & Ecology › Pollution & Waste Management

easy

**Q2. Consider the following:**

1. Carbon dioxide
2. Oxides of Nitrogen
3. Oxides of Sulphur

Which of the above is/are the emission/emissions from coal combustion at thermal power plants?

- (a) 1 only  
(b) 2 and 3 only  
(c) 1 and 3 only  
(d) 1, 2 and 3

**Answer: (d)**

Combustion of coal contains carbon, nitrogen and sulphur compounds; burning it releases carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and sulphur oxides (SO<sub>x</sub>). All three gases are routinely reported in power-plant emission inventories, so statements 1, 2 and 3 are all correct! option (d). ([epa.gov/newsreleases/epa-releases-2023-power-plant-emissions-data?utm\_source=openai])

**Q9. The formation of ozone hole in the Antarctic region has been a cause of concern. What could be the reason for the formation of this hole?**

- (a) Presence of prominent tropospheric turbulence; and inflow of chlorofluorocarbons
- (b) Presence of prominent polar front and stratospheric clouds; and inflow of chlorofluorocarbons**
- (c) Absence of polar front and stratospheric clouds; and inflow of methane and chlorofluorocarbons
- (d) Increased temperature at polar region due to global warming

**Answer: (b)**

The Antarctic vortex isolates cold polar air; within it, very low temperatures form polar stratospheric clouds (PSCs). Surface reactions on PSCs convert inert chlorine reservoirs into reactive ClO radicals, and when sunlight returns in spring the inflow/accumulated chlorofluorocarbons (CFCs) supply chlorine that destroys ozone rapidly—creating the ‘ozone hole’. Hence the key factors are the polar front plus PSCs along with CFCs (option b). Tropospheric turbulence, methane, or warming do not create the same catalytic conditions.

**Q12. Two important rivers – one with its source in Jharkhand (and known by a different name in Odisha), and another, with its source in Odisha – merge at a place only a short distance from the coast of Bay of Bengal before flowing into the sea. This is an important site of wildlife and biodiversity and a protected area. Which one of the following could be this?**

- (a) Bhitarkanika**
- (b) Chandipur-on-sea
- (c) Gopalpur-on-sea
- (d) Simlipal

**Answer: (a)**

The Brahmani River (rising from the confluence of the Koel and Sankh in Jharkhand and called Brahmani in Odisha) joins the Baitarani River (source in Odisha) before entering the Bay of Bengal, forming an extensive mangrove delta that constitutes the Bhitarkanika Wildlife Sanctuary/National Park, noted for salt-water crocodiles and rich biodiversity. Thus the site described is Bhitarkanika.  
([upscprep.com](https://www.upscprep.com/upsc-prelims-2011-gs-question-paper-and-answer-key/))

**Q15. Regarding “carbon credits”, which one of the following statements is not correct?**

- (a) The carbon credit system was ratified in conjunction with the Kyoto Protocol
- (b) Carbon credits are awarded to countries or groups that have reduced greenhouse gases below their emission quota
- (c) The goal of the carbon credit system is to limit the increase of carbon dioxide emission
- (d) Carbon credits are traded at a price fixed from time to time by the United Nations Environment Programme**

**Answer: (d)**

Carbon credits originated under the Kyoto Protocol and are earned by entities that cut emissions below a set quota with the overall aim of capping global CO<sub>2</sub> growth. Their price, however, is discovered in carbon markets through supply-demand forces, not fixed periodically by UNEP, making option (d) the only incorrect statement. ([testbook.com](https://testbook.com/question-answer/regarding-carbon-credits-which-one-of-601fd23c96baa2d39ced5500?utm\_source=openai))

**Q20. Three of the following criteria have contributed to the recognition of Western Ghats-Sri Lanka and Indo-Burma regions as hotspots of biodiversity:**

1. Species richness
2. Vegetation density
3. Endemism
4. Ethno-botanical importance
5. Threat perception
6. Adaptation of flora and fauna to warm and humid conditions

**Which three of the above are correct criteria in this context?**

- (a) 1, 2 and 6
- (b) 2, 4 and 6
- (c) 1, 3 and 5**
- (d) 3, 4 and 6

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**Answer: (c)**

A region is designated as a biodiversity hotspot only when it possesses exceptional species richness (especially of endemic vascular plants), a high degree of endemism, and faces severe threat or habitat loss. Vegetation density, ethno-botanical value or climatic adaptations are not part of Myers' hotspot yardsticks. Hence statements 1, 3 and 5 are the right criteria. ([selfstudyhistory.com](https://selfstudyhistory.com/2015/04/10/prelims-ias-general-studies-solved-paper-with-explanations-2011-part-7/?utm\_source=openai))

**Q21. Human activities in the recent past have caused the increased concentration of carbon dioxide in the atmosphere, but a lot of it does not remain in the lower atmosphere because of**

1. its escape into the outer stratosphere,
2. the photosynthesis by phytoplankton in the oceans,
3. the trapping of air in the polar ice caps.

**Which of the statements given above is/are correct?**

- (a) 1 and 2
- (b) 2 only**
- (c) 2 and 3
- (d) 3 only

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**Answer: (b)**

Large quantities of atmospheric CO<sub>2</sub> are continually removed by photosynthesis performed by phytoplankton, making the oceans the major short-term sink. CO<sub>2</sub> neither 'escapes' into the stratosphere (it is too heavy and is well-mixed in the troposphere) nor is significant CO<sub>2</sub> trapped in polar ice compared with the flux taken up biologically. Therefore only statement 2 is correct. ([scribd.com](https://www.scribd.com/document/973547011/1-UPSC-2011?utm\_source=openai))

**Q22. In the context of ecosystem productivity, marine upwelling zones are important as they increase the marine productivity by bringing the**

1. decomposer microorganisms to the surface,
2. nutrients to the surface,
3. bottom-dwelling organisms to the surface.

**Which of the statements given above is/are correct?**

- (a) 1 and 2
- (b) 2 only**
- (c) 2 and 3
- (d) 3 only

**Answer: (b)**

Coastal upwelling brings cold, nutrient-rich deep water to the sun-lit surface, fuelling algal blooms and making these belts among the most productive marine zones. It is the dissolved nutrients—not decomposer microbes or benthic animals—that are transported upward, so only statement 2 is correct.

([scribd.com](https://www.scribd.com/document/973547011/1-UPSC-2011?utm\_source=openai))

**Q23. If a tropical rain forest is removed, it does not regenerate quickly as compared to a tropical deciduous forest. This is because**

- (a) the soil of rain forest is deficient in nutrients**
- (b) propagules of the trees in a rain forest have poor viability
- (c) the rain forest species are slow-growing
- (d) exotic species invade the fertile soil of rain forest

**Answer: (a)**

Most nutrients in a tropical rain-forest are locked up in the biomass; the underlying oxisol/ultisol soils are heavily leached, acidic and nutrient-poor. Once the canopy is cleared, rapid leaching leaves little fertility for new growth, so regeneration is slow. Hence option (a) is the correct explanation, while the other reasons are secondary or incorrect. ([studyadda.com](https://www.studyadda.com/solved-papers/solved-paper-general-studies-2011\_q79/771/355508?utm\_source=openai))

**Q24. The Himalayan Range is very rich in species diversity. Which one among the following is the most appropriate reason for this phenomenon?**

- (a) It has a high rainfall that supports luxuriant vegetative growth
- (b) It is a confluence of different bio-geographical zones**
- (c) Exotic and invasive species have not been introduced in this region
- (d) It has less human interference

**Answer: (b)**

The Himalaya forms an ecotonal meeting ground of the Indo-Malayan, Palearctic and Afrotropical realms, creating a mosaic of habitats from tropical foothills to alpine zones. This confluence of diverse biogeographical regions underlies its extraordinary species richness, rather than merely high rainfall, absence of exotics or low human pressure. ([studyadda.com](https://www.studyadda.com/solved-papers/solved-paper-general-studies-2011\_q80/771/355509?utm\_source=openai))

**Q25. With reference to India, consider the following Central Acts:**

1. Import and Export (Control) Act, 1947
2. Mining and Mineral Development (Regulation) Act, 1957
3. Customs Act, 1962
4. Indian Forest Act, 1927

**Which of the above Acts have relevance to/bearing on the biodiversity conservation in the country?**

- (a) 1 and 3 only
- (b) 2, 3 and 4 only
- (c) 1, 2, 3 and 4**
- (d) None of the above Acts

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**Answer: (c)**

Each Act listed contains provisions that directly or indirectly help conserve biodiversity: the Import & Export (Control) Act 1947 and the Customs Act 1962 regulate trade in wildlife/plant specimens; the Mines & Minerals (Development and Regulation) Act 1957 imposes environmental safeguards on mining that protect habitats; and the Indian Forest Act 1927 governs protection and sustainable use of forest flora and fauna. Hence all four Acts are relevant to biodiversity conservation. ([cdn-images.prepp.in](https://cdn-images.prepp.in/public/image/UPSC\_CSE\_Prelims\_Paper\_1\_General\_Studies\_Question\_Paper\_June\_12\_2011\_\_311eb06a334890d742f0a28a3ba5cc9f.pdf))

**Q47. There is a concern over the increase in harmful algal blooms in the seawaters of India. What could be the causative factors for this phenomenon?**

1. Discharge of nutrients from the estuaries.
2. Run-off from the land during the monsoon.
3. Upwelling in the seas.

**Select the correct answer from the codes given below:**

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3**

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**Answer: (d)**

Harmful algal blooms flourish when nutrient levels in surface waters rise. (1) Nutrient-rich effluents from estuaries, (2) monsoonal run-off carrying fertilisers and sewage, and (3) coastal upwelling that brings deep, nutrient-laden water to the surface all supply the nutrients that trigger blooms, so all three factors are valid. ([licchavilyceum.com](https://licchavilyceum.com/upsc-prelims-2011-solved-paper/?utm\_source=openai))

**Q48. Consider the following :**

1. Photosynthesis
2. Respiration
3. Decay of organic matter
4. Volcanic action

**Which of the above add carbon dioxide to the carbon cycle on Earth ?**

- (a) 1 and 4 only
- (b) 2 and 3 only
- (c) 2, 3 and 4 only**
- (d) 1, 2, 3 and 4

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**Answer: (c)**

Respiration of organisms (2), microbial decay of organic matter (3) and volcanic eruptions or degassing (4) all emit CO<sub>2</sub> to the atmosphere. Photosynthesis (1) instead removes CO<sub>2</sub>, by fixing it into organic matter. Only statements 2, 3 and 4 add carbon dioxide. ([studyadda.com](https://www.studyadda.com/solved-papers/solved-paper-general-studies-2011\_q69/771/355488?utm\_source=openai))

**Q51. A sandy and saline area is the natural habitat of an Indian animal species. The animal has no predators in that area but its existence is threatened due to the destruction of its habitat. Which one of the following could be that animal ?**

- (a) Indian wild buffalo
- (b) Indian wild ass**
- (c) Indian wild boar
- (d) Indian gazelle

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**Answer: (b)**

The Indian wild ass naturally occurs in the saline desert and sandy grasslands of the Little Rann of Kutch, Gujarat. In this harsh habitat it has virtually no natural predators; however, expansion of salt-pan mining and grazing pressures threaten its survival. The other listed animals inhabit moist forests or semi-arid scrub, not saline desert tracts.

([upscprep.com](https://www.upscprep.com/upsc-prelims-2011-gs-question-paper-and-answer-key/))

**Q61. Biodiversity forms the basis for human existence in the following ways:**

1. Soil formation
2. Prevention of soil erosion
3. Recycling of waste
4. Pollination of crops

Select the correct answer using the codes given below:

- (a) 1, 2 and 3 only
- (b) 2, 3 and 4 only
- (c) 1 and 4 only
- (d) 1, 2, 3 and 4**

**Answer: (d)**

Biodiversity underpins all major regulating and supporting ecosystem services: living organisms drive soil formation, bind soil and prevent erosion, recycle nutrients and wastes, and many species (insects, birds, bats) pollinate crops. Therefore all four listed functions derive from biodiversity, making option (d) correct. ([testbook.com](https://testbook.com/question-answer/biodiversity-forms-the-basis-for-human-existence-i-60210fd1bb556431ae7d7b33?utm\_source=openai))

**Q72. Which one of the following is not a site for in-situ method of conservation of flora?**

- (a) Biosphere Reserve
- (b) Botanical Garden**
- (c) National Park
- (d) Wildlife Sanctuary

**Answer: (b)**

In-situ conservation maintains species in their natural habitat, as in biosphere reserves, national parks and wildlife sanctuaries. Botanical gardens keep plants in managed, artificial settings and are therefore an ex-situ method, making choice (b) the only one that is not in-situ. ([studyadda.com](https://www.studyadda.com/solved-papers/solved-paper-general-studies-2011\_q43/771/355482?utm\_source=openai))

**Q76. The 2004 Tsunami made people realize that mangroves can serve as a reliable safety hedge against coastal calamities. How do mangroves function as a safety hedge?**

- (a) The mangrove swamps separate the human settlements from the sea by a wide zone in which people neither live nor venture out
- (b) The mangroves provide both food and medicines which people are in need of after any natural disaster
- (c) The mangrove trees are tall with dense canopies and serve as an excellent shelter during a cyclone or tsunami
- (d) The mangrove trees do not get uprooted by storms and tides because of their extensive roots**

**Answer: (d)**

Mangrove trees possess inter-locking prop and pneumatophore roots that anchor them firmly in soft, water-logged soils; this root network disperses wave energy so the trees are rarely uprooted by cyclones or tsunami surges. The other options describe features that are not the primary physical mechanism of protection. ([testbook.com](https://testbook.com/question-answer/the-2004-tsunami-made-people-realize-tha-t-mangrove--602133853474ef76ffc28b9a?utm\_source=openai))

**Q79. The "Red Data Books" published by the International Union for Conservation of Nature and Natural Resources (IUCN) contain lists of**

1. Endemic plant and animal species present in the biodiversity hotspots.
2. Threatened plant and animal species.
3. Protected sites for conservation of nature and natural resources in various countries.

Select the correct answer using the codes given below:

- (a) 1 and 3
- (b) 2 only**
- (c) 2 and 3
- (d) 3 only

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**Answer: (b)**

The IUCN Red Data Book catalogues threatened (Vulnerable, Endangered, Critically Endangered, etc.) plant and animal species worldwide. It does not list endemic species per hotspot nor does it list protected areas; therefore only statement 2 is correct. ([testbook.com](https://testbook.com/question-answer/the-red-d-ata-books-published-by-the-in--60213610b3e985d685829306?utm\_source=openai))

**Q96. Consider the following statements:**

1. Biodiversity is normally greater in the lower latitudes as compared to the higher latitudes.
2. Along the mountain gradients, biodiversity is normally greater in the lower altitudes as compared to the higher altitudes.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2**
- (d) Neither 1 nor 2

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**Answer: (c)**

Species richness generally increases from the poles toward the equator, so lower latitudes have higher biodiversity. Along mountain slopes, harsher temperatures and shorter growing seasons at higher elevations reduce species variety, so lower altitudes support more biodiversity. Therefore both statements are correct. ([licchavilyceum.com](https://licchavilyceum.com/upsc-prelims-2011-solved-paper/?utm\_source=openai))

**Q4. A new type of El Nino called El Nino Modoki appeared in the news. In this context, consider the following statements:**

- 1. Normal El Nino forms in the Central Pacific ocean whereas El Nino Modoki forms in Eastern Pacific ocean.**
- 2. Normal El Nino results in diminished hurricanes in the Atlantic ocean but El Nino Modoki results in a greater number of hurricanes with greater frequency.**

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only**
- (c) Both 1 and 2
- (d) Neither 1 nor 2

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**Answer: (b)**

A classical El Niño event warms the eastern Pacific, whereas El Niño Modoki features anomalous warming in the central Pacific; thus statement 1 is incorrect. Modoki events have been linked to enhanced Atlantic hurricane activity, making statement 2 correct.

([gktoday.in](https://www.gktoday.in/analysis-of-upsc-civil-services-2010-gs-paper-part-1/))

**Q20. Consider the following statements :**

- 1. Biodiversity hotspots are located only in tropical regions.**
- 2. India has four biodiversity hotspots i.e., Eastern Himalayas, Western Himalayas, Western Ghats and Andaman and Nicobar Islands.**

**Which of the statements given above is/are correct ?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2**

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**Answer: (d)**

Hotspots are defined by endemism + threat, and several lie in temperate zones such as California Floristic Province and the Mediterranean; hence statement 1 is wrong. India's hotspots are Himalaya, Indo-Burma (includes N-E and Andaman–Nicobar) and Western Ghats–Sri Lanka—Western Himalaya is not listed separately and Andaman–Nicobar fall within Indo-Burma, so statement 2 is also wrong. Therefore neither statement is correct.

([gktoday.in](https://www.gktoday.in/analysis-of-upsc-civil-services-2010-gs-paper-part-1/))

**Q22. Consider the following statements:**

1. The boundaries of a National Park are defined by legislation.
2. A Biosphere Reserve is declared to conserve a few specific species of flora and fauna.
3. In a Wildlife Sanctuary, limited biotic interference is permitted.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only**
- (d) 1, 2 and 3

**Answer: (c)**

Under the Wildlife (Protection) Act 1972 a National Park is finally notified and its boundary can be altered only by a resolution of the State Legislature, so statement 1 is correct. Biosphere Reserves aim to conserve entire ecosystems with core–buffer–transition zones, not merely a few species, so statement 2 is incorrect. Wildlife Sanctuaries do permit regulated grazing, firewood collection etc.; hence statement 3 is correct. Thus statements 1 and 3 only are right. ([edurev.in](https://edurev.in/t/203219/Geography-of-India-Solved-Questions--2007-2010-?utm\_source=openai))

**Q23. A pesticide which is a chlorinated hydrocarbon is sprayed on a food crop. The food chain is: Food crop – Rat – Snake – Hawk. In this food chain, the highest concentration of the pesticide would accumulate in which one of the following?**

- (a) Food crop
- (b) Rat
- (c) Snake
- (d) Hawk**

**Answer: (d)**

Chlorinated hydrocarbons such as DDT are persistent and fat-soluble; their concentration rises at each trophic level (biomagnification). In the chain food-crop! rat! snake! hawk, the hawk is and therefore accumulates the highest residue. ([gktoday.in](https://www.gktoday.in/analysis-of-upsc-civil-services-2010-gs-paper-part-ii/))

**Q38. Consider the following:**

1. Oxides of Hydrogen
2. Oxides of Nitrogen
3. Oxides of Sulphur

Which of the above causes/cause acid rain?

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only**
- (d) 1, 2 and 3

**Answer: (c)**

Acid rain forms when emissions of sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) react with moisture to produce sulfuric and nitric acids; oxides of hydrogen (water) do not contribute. Therefore only oxides of nitrogen and sulfur (2 and 3) are responsible. ([britannica.com](https://www.britannica.com/science/What-Causes-Acid-Rain?utm\_source=openai))

**Q56. The United Nations Framework Convention on Climate Change (UNFCCC) is an international treaty drawn at**

- (a) United Nations' Conference on the Human Environment, Stockholm, 1972
- (b) UN Conference on Environment and Development, Rio de Janeiro, 1992**
- (c) World Summit on Sustainable Development, Johannesburg, 2002
- (d) UN Climate Change Conference, Copenhagen, 2009

**Answer: (b)**

The UN Framework Convention on Climate Change (UNFCCC) was opened for signature at the UN Conference on Environment and Development (UNCED) held in Rio de Janeiro from 3–14 June 1992 (Earth Summit). It did not originate at the 1972 Stockholm meet, the 2002 Johannesburg summit, or the 2009 Copenhagen COP.

**Q59. India is a party to the Ramsar Convention and has declared many areas as Ramsar Sites. Which of the following statements best describes how we should maintain these sites in the context of this Convention?**

- (a) Keep all the sites completely inaccessible to man so that they will not be exploited.
- (b) Conserve all the sites through ecosystem approach and permit tourism and recreation only.
- (c) Conserve all the sites through ecosystem approach for a period without any exploitation, with specific criteria and specific period for each site, and then allow sustainable use of them by future generations.
- (d) Conserve all the sites through ecosystem approach and allow their simultaneous sustainable use.**

**Answer: (d)**

Under Article 3 and subsequent 'wise use' guidelines, Parties must conserve the ecological character of all wetlands through an ecosystem approach while permitting their simultaneous sustainable use. The Convention does not demand total exclusion of humans (a), restrict sites only to tourism (b), or mandate a fixed moratorium before use (c).

**Q60. Other than *Jatropha curcas*, why is *Pongamia pinnata* also considered a good option for the production of bio-diesel in India?**

1. *Pongamia pinnata* grows naturally in most of the arid regions of India.
  2. The seeds of *Pongamia pinnata* are rich in lipid content of which nearly half is oleic acid.
- Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2**
- (d) Neither 1 nor 2

**Answer: (c)**

*Pongamia pinnata* is a hardy, drought-tolerant leguminous tree that grows naturally across much of dry-land/sem-arid India, making it suitable for marginal arid zones. Its seed oil typically contains ~47–60 % oleic acid, giving a high lipid/mono-unsaturated profile ideal for biodiesel production([researchgate.net](https://www.researchgate.net/publication/225255623\_Development\_of\_Pongamia\_pinnata\_as\_an\_alternative\_bi\_ofuel\_crop\_-\_current\_status\_and\_scope\_of\_plantations\_in\_India?utm\_source=openai)).

**Q61. Due to their extensive rice cultivation, some regions may be contributing to global warming. To what possible reason/reasons is this attributable?**

1. The anaerobic conditions associated with rice cultivation cause the emission of methane.
  2. When nitrogen based fertilizers are used, nitrous oxide is emitted from the cultivated soil.
- Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer: (a)**

Continuously flooded rice paddies create anaerobic soil conditions that favour methanogenic bacteria, so rice cultivation is a major anthropogenic source of  $CH_4$ . In contrast, nitrous-oxide ( $N_2O$ ) from aerobic nitrification/denitrification after heavy N-fertilizer use in upland soils; under the strictly anaerobic conditions of flooded paddy this pathway is limited, so large  $N_2O$  emissions are not. Hence only statement 1 is correct([iasexamportal.com](https://iasexamportal.com/Answer-Key/General-Studies-Solution-CSP-2010)).

**Q62. Sustainable development is described as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. In this perspective, inherently the concept of sustainable development is intertwined with which of the following concepts ?**

- (a) Social justice and empowerment
- (b) Inclusive Growth
- (c) Globalization
- (d) Carrying capacity

**Answer: (d)**

The Brundtland definition links sustainability to using natural resources at rates that do not exceed the environment's 'carrying capacity'—the maximum level an ecosystem can support without degradation. Social justice, inclusive growth or globalisation are relevant but not inherent to the definitional core, whereas carrying capacity is explicitly intertwined with the concept of sustainable development([iasexamportal.com](https://iasexamportal.com/Answer-Key/General-Studies-Solution-CSP-2010)).

**Q63. Given below are the names of four energy crops. Which one of them can be cultivated for ethanol ?**

- (a) Jatropha
- (b) Maize
- (c) Pongamia
- (d) Sunflower

**Answer: (b)**

Ethanol is commercially produced from starch-rich grain crops; in India and worldwide, maize (corn) is the principal feedstock because its kernels are ~60 % starch that can be hydrolysed and fermented. Jatropha, Pongamia and sunflower are oil-seed crops suited to biodiesel, not ethanol. Therefore maize is the correct energy crop for ethanol cultivation([iasexamportal.com](https://iasexamportal.com/Answer-Key/General-Studies-Solution-CSP-2010)).

**Q64. Consider the following pairs:**

**Protected area — Well-known for**

1. Bhitarkanika, Orissa — Salt Water Crocodile
2. Desert National Park, Rajasthan — Great Indian Bustard
3. Eravikulam, Kerala — Hoolak Gibbon

**Which of the pairs given above is/are correctly matched ?**

- (a) 1 only
- (b) 1 and 2 only**
- (c) 2 only
- (d) 1, 2 and 3

**Answer: (b)**

Bhitarkanika National Park in Odisha is famous for its sizeable population of salt-water crocodiles, and Desert National Park in Rajasthan is a stronghold of the critically endangered Great Indian Bustard, so pairs 1 and 2 are correctly matched. Eravikulam National Park, however, is noted for the Nilgiri tahr—not the Hoolock gibbon (which occurs in Northeast India). Hence only pairs 1 and 2 are correct([v1.wii.gov.in](https://v1.wii.gov.in/nmcg/priority-species/reptiles/salt-water-crocodile?utm\_source=openai))

**Q65. Some species of plants are insectivorous. Why ?**

- (a) Their growth in shady and dark places does not allow them to undertake sufficient photosynthesis and thus they depend on insects for nutrition.
- (b) They are adapted to grow in nitrogen deficient soils and thus depend on insects for sufficient nitrogenous nutrition.**
- (c) They cannot synthesize certain vitamins themselves and depend on the insects digested by them.
- (d) They have remained in that particular stage of evolution as living fossils, a link between autotrophs and heterotrophs.

**Answer: (b)**

Carnivorous plants typically grow in bogs and other nitrogen-poor soils; by digesting insects they obtain the nitrogen compounds that the soil cannot supply, enabling normal protein synthesis and growth. Low light or vitamin needs are not the cause, and they are not 'living fossils'. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Venus\_flytrap?utm\_source=openai))

**Q69. In India, which type of forest among the following occupies the largest area?**

- (a) Montane Wet Temperate Forest
- (b) Sub-tropical Dry Evergreen Forest
- (c) Tropical Moist Deciduous Forest**
- (d) Tropical Wet Evergreen Forest

**Answer: (c)**

Among Champion-&-Seth forest classes, Tropical Moist Deciduous Forests cover the greatest extent (about 38 % of India's total forest area), stretching across the wetter flanks of the Deccan Plateau, eastern India and the lower Himalayan slopes. Other formations such as montane temperate, dry evergreen or wet evergreen occupy much smaller areas. ([sawaal.com](https://www.sawaal.com/indian-geography-question-and-answers/in-india-which-type-of-forest-among-the-following-occupies-the-largest-area-\_10331?utm\_source=openai))

**Q74. Which one of the following reflects back more sunlight as compared to the other three?**

- (a) Sand desert
- (b) Paddy crop land
- (c) Land covered with fresh snow**
- (d) Prairie land

**Answer: (c)**

Fresh, clean snow has the highest albedo ("H 80-90 %), reflecting far more incoming solar radiation than sand deserts, croplands or prairies, so "land covered with fresh snow" reflects back the most sunlight. ([testbook.com](https://testbook.com/question-answer/which-one-of-the-following-reflects-back-more-sunl--60803a421cce4719d77ee29d?utm\_source=openai))

**Q103. King Cobra is the only snake that makes its own nest. Why does it make its nest?**

- (a) It is a snake-eater and the nest helps attract other snakes
- (b) It is a viviparous snake and needs a nest to give birth to its offspring
- (c) It is an oviparous snake and lays its eggs in the nest and guards the nest until they are hatched**
- (d) It is a large, cold blooded animal, and needs a nest to hibernate in the cold season

**Answer: (c)**

The female King Cobra (*Ophiophagus hannah*) is the only snake that builds a nest; it is oviparous and constructs a leaf-litter mound, lays its eggs inside and remains to guard them until they hatch. This matches option (c); the other options misdescribe its reproductive mode or purpose. ([en.wikipedia.org](https://en.wikipedia.org/wiki/King\_cobra))

**Q104. As a result of their annual survey, the National Geographic Society and an international polling firm GlobeScan gave India top rank in Greendex 2009 score. What is this score?**

- (a) It is a measure of efforts made by different countries in adopting technologies for reducing carbon footprint
- (b) It is a measure of environmentally sustainable consumer behaviour in different countries**
- (c) It is an assessment of programmes/schemes undertaken by different countries for improving the conservation of natural resources
- (d) It is an index showing the volume of carbon credits sold by different countries

**Answer: (b)**

The Greendex, produced by the National Geographic Society and GlobeScan, is a composite index that 'measures consumer behaviour in areas such as housing, transportation, food and goods' to gauge how environmentally sustainable consumers in different countries are. Thus it is a measure of environmentally sustainable consumer behaviour, making option (b) correct. ([globescan.com](https://globescan.com/2014/09/26/increased-fears-about-environment-but-little-change-in-consumer-behavior-national-geographic-globescan-study/))

**Q105. Consider the following statements:**

- 1. The Taxus tree naturally found in the Himalayas.**
- 2. The Taxus tree is listed in the Red Data Book.**
- 3. A drug called “taxol” is obtained from Taxus tree is effective against Parkinson’s disease.**

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 1 and 2 only**
- (c) 2 and 3 only
- (d) 1, 2 and 3

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**Answer: (b)**

Taxus wallichiana (Himalayan yew) grows naturally in the Himalayan region and is classified as ‘Endangered’, hence recorded in the Red Data Book. Paclitaxel/Taxol obtained from the tree is an anti-cancer chemotherapeutic; it is not used for Parkinson’s disease, so statement 3 is false. Therefore only statements 1 and 2 are correct. ([testbook.com](https://testbook.com/question-answer/consider-the-following-statements-1-the-taxus--608050578fc7b40e1a00304b?utm\_source=openai))

**Q129. What are the possible limitations of India in mitigating the global warming at present and in the immediate future ?**

- 1. Appropriate alternate technologies are not sufficiently available.**
- 2. India cannot invest huge funds in research and development.**
- 3. Many developed countries have already set up their polluting industries in India.**

**Which of the statements given above is/are correct ?**

- (a) 1 and 2 only**
- (b) 2 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

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**Answer: (a)**

Limited availability of cost-effective alternative technologies (1) and the high upfront R&D investment India would require (2) are acknowledged constraints; the blanket assertion that many developed countries have already shifted their polluting industries to India is not broadly valid, so only 1 and 2 hold true. ([iasexamportal.com](https://iasexamportal.com/Answer-Key/General-Studies-Solution-CSP-2010))

**Q149. Consider the following which can be found in the ambient atmosphere :**

1. Soot
2. Sulphur hexafluoride
3. Water vapour

**Which of the above contribute to the warming up of the atmosphere ?**

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3**

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**Answer: (d)**

All three listed constituents warm the atmosphere: (1) soot/black-carbon particles absorb solar radiation and reduce albedo; (2) sulphur hexafluoride is the most potent long-lived greenhouse gas ("H<sub>2</sub>O" is not a greenhouse gas because it is not long-lived); (3) water vapour is the dominant natural greenhouse gas. Therefore 1, 2 and 3 all contribute to atmospheric warming.

([iasexamportal.com](https://iasexamportal.com/Answer-Key/General-Studies-Solution-CSP-2010))

— 2009 —

**Q4. In India, which one of the following States has the largest inland saline wetland?**

- (a) Gujarat
- (b) Haryana
- (c) Madhya Pradesh
- (d) Rajasthan**

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**Answer: (d)**

Sambhar Salt Lake in Rajasthan is India's largest inland saline wetland, covering about 190–230 km<sup>2</sup>; no comparable inland salt lake exists in Gujarat, Haryana or Madhya Pradesh. Therefore Rajasthan is the correct state (option d).

([en.wikipedia.org](https://en.wikipedia.org/wiki/Sambhar\_Salt\_Lake?utm\_source=openai))

**Q90. Which one of the following Union Ministries implements the Cartagena Protocol on Biosafety ?**

- (a) Ministry of Science and Technology
- (b) Ministry of Health and Family Welfare
- (c) Ministry of Environment and Forests**
- (d) Ministry of Chemicals and Fertilizers

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**Answer: (c)**

India's national focal point for implementing the Cartagena Protocol on Biosafety is the Ministry of Environment and Forests (now MoEF&CC); it frames and enforces biosafety regulations for Living Modified Organisms. The other ministries have no statutory role in Cartagena Protocol compliance.

([thegef.org](https://www.thegef.org/projects-operations/projects/1628?utm\_source=openai))

**Q91. Where is the headquarters of Animal Welfare Board of India located ?**

- (a) Ahmedabad
- (b) Chennai**
- (c) Hyderabad
- (d) Kolkata

**Answer: (b)**

From its establishment in 1962 until its relocation in 2018, the headquarters of the Animal Welfare Board of India was in Chennai; the UPSC-2009 question therefore refers to Chennai. Options Ahmedabad, Hyderabad and Kolkata have never been AWBI headquarters.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Animal\_Welfare\_Board\_of\_India?utm\_source=openai))

**Q111. In the context of CO<sub>2</sub> emission and Global Warming, what is the name of the UNFCCC that allows developing countries to get funds/incentives from the developed countries to adopt better technologies that reduce greenhouse gas emissions ?**

- (a) Carbon Footprint
- (b) Carbon Credit Rating
- (c) Clean Development Mechanism**
- (d) Emission Reduction Norm

**Answer: (c)**

The Clean Development Mechanism (CDM), created under Article 12 of the Kyoto Protocol/UNFCCC, lets Annex I (developed) countries fund emission-reduction projects in developing countries and earn saleable certified emission-reduction credits—precisely the market-driven incentive device described. Other options are either generic terms or not UNFCCC mechanisms.

([unfccc.int](https://unfccc.int/zh/node/17693?utm\_source=openai))

**Q112. The concept of carbon credit originated from which one of the following ?**

- (a) Earth Summit, Rio de Janeiro
- (b) Kyoto Protocol**
- (c) Montreal Protocol
- (d) G-8 Summit, Heiligendamm

**Answer: (b)**

Tradable 'carbon credits' were introduced by the 1997 Kyoto Protocol, which established flexible mechanisms such as emissions trading, CDM and Joint Implementation; these credits allow countries to meet binding emission-reduction targets. The Earth Summit and Montreal Protocol deal with other environmental issues, and the G-8 summit did not create the carbon-credit system. ([drishtias.com](https://www.drishtias.com/current-affairs-news-analysis-editorials/news-editorials/2023-01-30/print/manual?utm\_source=openai))

**Q132. The marine animal called dugong which is vulnerable to extinction is a/an**

- (a) Amphibian
- (b) Bony fish
- (c) Shark
- (d) Mammal**

**Answer: (d)**

The dugong (Dugong dugon) is a marine mammal of the order Sirenia and is listed as Vulnerable on the IUCN Red List. It is therefore classified as a mammal, not a fish, shark or amphibian.  
([en.wikipedia.org](https://en.wikipedia.org/wiki/Dugong?utm\_source=openai))

**Q142. Consider the following names :**

1. Ike
2. Kate
3. Gustav

**Which of the above are the names of hurricanes that had occurred very recently ?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only**
- (d) 1, 2 and 3

**Answer: (c)**

Hurricanes Ike and Gustav were both major storms of the 2008 Atlantic season. "Kate," however, was an older storm name (major hurricane in 1985, no hurricane Kate in 2007-08), so only Ike (1) and Gustav (3) fit the description of having occurred very recently (in 2008). Hence statements 1 and 3 only are correct.  
([en.wikipedia.org](https://en.wikipedia.org/wiki/Hurricane\_Ike?utm\_source=openai))

**Q143. In the context of alternative sources of energy, ethanol as a viable bio-fuel can be obtained from**

- (a) Potato
- (b) Rice
- (c) Sugarcane**
- (d) Wheat

**Answer: (c)**

Commercial fuel ethanol is commonly produced by fermenting the sucrose in sugarcane; Brazil's long-running ethanol programme is the classic example. Starchy cereals such as rice, wheat and tubers like potato are not the primary industrial sources for ethanol fuel.  
([en.wikipedia.org](https://en.wikipedia.org/wiki/Sugarcane?utm\_source=openai))

**Q148. Consider the following regions:**

1. Eastern Himalayas
2. Eastern Mediterranean region
3. North-western Australia

**Which of the above is/are Biodiversity Hotspot(s)?**

- (a) 1 only
- (b) 1 and 2 only**
- (c) 2 and 3 only
- (d) 1, 2 and 3

**Answer: (b)**

Conservation International recognises both the Eastern Himalayas and the Mediterranean Basin as biodiversity hotspots. Australia's recognised hotspot is the \*Southwest\* (not the North-west) region, so North-western Australia is **\*\*not\*\*** on the hotspot list. Hence only statements 1 and 2 are correct. ([worldatlas.com](https://www.worldatlas.com/geography/eastern-himalaya-biodiversity-hotspot.html?utm\_source=openai))

**Q150. The Panda belongs to the same family as that of**

- (a) Bear**
- (b) Cat
- (c) Dog
- (d) Rabbit

**Answer: (a)**

The giant panda (*Ailuropoda melanoleuca*) is a member of the bear family Ursidae; cats (*Felidae*), dogs (*Canidae*) and rabbits (*Leporidae*) belong to entirely different families. ([aspireias.com](https://www.aspireias.com/upsc-general-study-10years-paper/2009))

— 2008 —

**Q13. Which one of the following Union Ministries is implementing the Biodiesel Mission (as Nodal Ministry)?**

- (a) Ministry of Agriculture
- (b) Ministry of Science and Technology
- (c) Ministry of New and Renewable Energy
- (d) Ministry of Rural Development**

**Answer: (d)**

The National Biodiesel Mission designated the Ministry of Rural Development as the nodal ministry responsible for its implementation, with a special focus on *jatropha* plantations. Hence option (d) is correct, while the other ministries play only supportive or research roles. ([drishtias.com](https://www.drishtias.com/current-affairs-news-analysis-editorials/news-editorials/2023-10-13/print?utm\_source=openai))

**Q20. Consider the following:**

1. Rice fields
2. Coal mining
3. Domestic animals
4. Wetlands

**Which of the above are sources of methane, a major greenhouse gas?**

- (a) 1 and 4 only
- (b) 2 and 3 only
- (c) 1, 2 and 3 only
- (d) 1, 2, 3 and 4**

**Answer: (d)**

Rice paddies and natural wetlands generate methane through anaerobic decomposition; ruminant livestock emit it via enteric fermentation; and coal mining releases trapped coal-bed methane. Hence all the items are recognised methane sources. ([selfstudyhistory.com](https://selfstudyhistory.com/2015/01/22/gs-prelims-previous-years-question-paper-2008-part-3/?utm\_source=openai))

**Q25. Consider the following statements:**

1. Salt-water crocodile is found in the Andaman and Nicobar Islands.
2. Shrew and tapir are found in the Western Ghats of the Malabar region.

**Which of the statements given above is/are correct?**

- (a) 1 only**
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer: (a)**

The salt-water/estuarine crocodile (*Crocodylus porosus*) naturally occurs along the coasts and creeks of the Andaman & Nicobar Islands, so statement 1 is true. Tapirs (the Malayan/Asian tapir, *Tapirus indicus*) are native to the Malay Peninsula, Sumatra and adjoining parts of Southeast Asia and are not found in India, so statement 2 is false (although certain shrew species do occur in the Western Ghats). Hence only statement 1 is correct. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Saltwater\_crocodile?utm\_source=openai))

**Q29. For which one of the following snakes is the diet mainly composed of other snakes?**

- (a) Krait
- (b) Russell's viper
- (c) Rattlesnake
- (d) King cobra**

**Answer: (d)**

The scientific name of the king cobra, *Ophiophagus hannah*, literally means "snake-eater"; its diet consists predominantly of other snakes (including rat snakes, kraits, and smaller cobras) and occasionally lizards. The krait, Russell's viper and rattlesnakes mainly prey on rodents or other small vertebrates, not chiefly on snakes. ([en.wikipedia.org](https://en.wikipedia.org/wiki/King\_cobra?utm\_source=openai))

**Q90. Out of all the Biosphere Reserves in India, four have been recognized on the World Network by UNESCO. Which one of the following is not one of them?**

- (a) Gulf of Mannar
- (b) Kanchenjunga**
- (c) Nanda Devi
- (d) Sunderbans

**Answer: (b)**

By 2008, the Indian biosphere reserves already on UNESCO's World Network were Nilgiri (2000), Gulf of Mannar (2001), Sunderbans (2001) and Nanda Devi (2004). Khangchendzonga (Kanchenjunga) joined the list only in 2018, so it was not yet recognised then. ([samkalpias.com](https://www.samkalpias.com/en/current-affairs-detail/current-affairs-04-October-2025?utm\_source=openai))

**Q95. Where was the World Summit on Sustainable Development (Rio + 10) held?**

- (a) Davos
- (b) Nova Scotia
- (c) Johannesburg**
- (d) Shanghai

**Answer: (c)**

The Rio + 10 World Summit on Sustainable Development was held in Johannesburg, South Africa, from 26 August – 4 September 2002; hence option (c) is correct. The other locations (Davos, Nova Scotia, Shanghai) never hosted the summit.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Earth\_Summit\_2002?utm\_source=openai))

**Q96. Consider the following statements:**

- 1. Clean Development Mechanism (CDM) in respect of carbon credits is one of the Kyoto Protocol Mechanisms.**
- 2. Under the CDM, the projects handled pertain only to the Annex-I countries.**

**Which of the statements given above is/are correct?**

- (a) 1 only**
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer: (a)**

Statement 1 is right: the Clean Development Mechanism (CDM) is one of the three flexible mechanisms created by the Kyoto Protocol (the others are Joint Implementation and Emissions Trading). Statement 2 is wrong because CDM projects are carried out in non-Annex I (developing) countries, with Annex I parties earning Certified Emission Reductions for financing them. Therefore only Statement 1 is correct.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Clean\_Development\_Mechanism?utm\_source=openai))

**Q137. The release of which one of the following into ponds and wells helps in controlling the mosquitoes?**

- (a) Crab
- (b) Dogfish
- (c) Gambusia fish**
- (d) Snail

**Answer: (c)**

Gambusia (mosquitofish) are routinely introduced into wells and ponds because each fish can consume hundreds of mosquito larvae daily, making them an effective eco-friendly larvicide; crabs, dogfish and snails do not serve this purpose. ([drishtiiias.com](https://www.drishtiiias.com/current-affairs-news-analysis-editorial/s/news-analysis/20-10-2023/print/manual?utm\_source=openai))

**Q145. Which one among the following has the maximum number of National Parks?**

- (a) Andaman and Nicobar Islands**
- (b) Arunachal Pradesh
- (c) Assam
- (d) Meghalaya

**Answer: (a)**

As of 2008 Andaman & Nicobar Islands had nine notified national parks (e.g., Mahatma Gandhi Marine, Mount Harriet, Campbell Bay), whereas Arunachal Pradesh had 2, Assam 5 and Meghalaya 2. Hence it tops the list. ([licchavilyceum.com](https://licchavilyceum.com/upsc-civil-services-prelims-2008-solved-question-paper/?utm\_source=openai))

**Q146. Among the following, which one is not an ape?**

- (a) Gibbon
- (b) Gorilla
- (c) Langur**
- (d) Orangutan

**Answer: (c)**

Gibbons, gorillas and orangutans belong to the super-family Hominoidea (apes) which lack tails. Langurs are Old-World monkeys (family Cercopithecidae) and therefore are not apes. ([licchavilyceum.com](https://licchavilyceum.com/upsc-civil-services-prelims-2008-solved-question-paper/?utm\_source=openai))

UPSC 2007

Environment & Ecology › Environmental Governance & Legislation

easy

**Q6. Wangari Maathai, the Nobel Prize winner from Kenya, is known for her contribution to which one of the following?**

- (a) Journalism
- (b) International economics
- (c) Sustainable development**
- (d) Child development

---

**Answer: (c)**

Kenyan environmentalist Wangari Maathai received the 2004 Nobel Peace Prize “for her contribution to sustainable development, democracy and peace,” principally through her Green Belt Movement that promoted large-scale tree planting and ecological conservation. The prize was not for journalism, economics, or child development.

([nobelprize.org](https://www.nobelprize.org/prizes/peace/2004/maathai/facts/?utm\_source=openai))

UPSC 2007

Environment & Ecology › Protected Areas & Wildlife

easy

**Q70. Which one of the following is also known as Top Slip?**

- (a) Simlipal National Park
- (b) Periyar Wildlife Sanctuary
- (c) Manjira Wildlife Sanctuary
- (d) Indira Gandhi Wildlife Sanctuary and National Park**

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**Answer: (d)**

“Top Slip” is the popular tourist zone on the northeast edge of Indira Gandhi Wildlife Sanctuary & National Park (also called Anamalai Tiger Reserve) in Tamil Nadu; hence option (d) is correct. The sanctuaries in options (a), (b), and (c) are in other states and are not known by this nickname.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Anamalai\_Tiger\_Reserve?utm\_source=openai))

UPSC 2007

Environment & Ecology › Protected Areas & Wildlife

easy

**Q87. Which of the following is located in the Bastar region?**

- (a) Bandhavgarh National Park
- (b) Dandeli Sanctuary
- (c) Rajaji National Park
- (d) Indravati National Park**

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**Answer: (d)**

Indravati National Park is situated in the Bastar region of southern Chhattisgarh; none of the other parks listed (Bandhavgarh in Madhya Pradesh, Dandeli in Karnataka and Rajaji in Uttarakhand) lie in Bastar.

([bastar.gov.in](https://bastar.gov.in/en/tourism/?utm\_source=openai))

**Q90. The largest coral reef in the world is found near the coast of which one of the following countries?**

- (a) Australia
- (b) Cuba
- (c) Ghana
- (d) Philippines

**Answer: (a)**

The world's largest coral system is the Great Barrier Reef, stretching for over 2,300 km off the north-east coast of Australia; no comparably large reef exists off Cuba, Ghana or the Philippines.

([whc.unesco.org](https://whc.unesco.org/en/list/154?utm_source=openai))([https://whc.unesco.org/en/list/154?utm\\_source=openai](https://whc.unesco.org/en/list/154?utm_source=openai))

**Q93. Dalbergia species is associated with which one of the following?**

- (a) Cashew-nut
- (b) Coffee
- (c) Tea
- (d) Rosewood

**Answer: (d)**

Dalbergia is the genus that yields commercial rosewoods such as *Dalbergia latifolia* and *D. sissoo*; it is not related to cashew, coffee or tea, so 'Rosewood' is the correct association. ([jagranjosh.com](https://www.jagranjosh.com/articles/ias-prelims-general-studies-solved-question-paper-2007-1307667428-1))(<https://www.jagranjosh.com/articles/ias-prelims-general-studies-solved-question-paper-2007-1307667428-1>)

**Q94. Consider the following statements :**

1. In India, Red Panda is naturally found in the western Himalaya only.
2. In India, Slow Loris lives in the dense forests of the North-East.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer: (b)**

The Red Panda's natural Indian range is the eastern Himalaya (Sikkim, West Bengal, Arunachal Pradesh), not the western Himalaya, making statement 1 false. The Bengal Slow Loris inhabits the dense evergreen forests of North-East India, so statement 2 is correct; hence only statement 2 is true. ([jagranjosh.com](https://www.jagranjosh.com/articles/ias-prelims-general-studies-solved-question-paper-2007-1307667428-1))(<https://www.jagranjosh.com/articles/ias-prelims-general-studies-solved-question-paper-2007-1307667428-1>)

UPSC 2006

Environment & Ecology › Climate Change & Greenhouse Gases

moderate

**Q54. Which one of the following countries is the first country in the world to propose a carbon tax for its people to address global warming?**

- (a) Australia
- (b) Germany
- (c) Japan
- (d) New Zealand**

**Answer: (d)**

In May 2005 New Zealand announced that it would levy a carbon tax of NZ\$ 11 per tonne making it the first country to require its population to pay a direct carbon tax aimed at curbing global warming. Hence option (d) New Zealand is correct; the other listed countries proposed or adopted such taxes later. ([theguardian.com](https://www.theguardian.com/environment/2005/may/05/environment.society?utm\_source=openai))

UPSC 2006

Environment & Ecology › Protected Areas & Wildlife

easy

**Q71. Where is Bundala Biosphere Reserve which has been recently added to the UNESCO's Man and Biosphere (MAB) network, located?**

- (a) Russia
- (b) India
- (c) Sri Lanka**
- (d) Bangladesh

**Answer: (c)**

Bundala Biosphere Reserve, added to UNESCO's Man and the Biosphere Network in 2005, is situated on the south-east coast of Sri Lanka. Options (a), (b) and (d) are therefore incorrect. ([unesco.org](https://www.unesco.org/en/mab/bundala?utm\_source=openai))

— 2005 —

UPSC 2005

Environment & Ecology › International Environmental Treaties & Summits

moderate

**Q6. Consider the following statements :**

- 1. Kyoto Protocol came into force in the year 2005**
- 2. Kyoto Protocol deals primarily with the depletion of the Ozone layer.**
- 3. Methane as a greenhouse gas is more harmful than carbon dioxide**

**Which of the statements given above is/are correct?**

- (a) 1 and 2
- (b) 1 and 3**
- (c) 1 only
- (d) 3 only

**Answer: (b)**

The Kyoto Protocol entered into force on 16 February 2005, satisfying statement 1. It addresses greenhouse-gas mitigation under the UNFCCC, not ozone-layer depletion (statement 2 incorrect).

Methane has a 100-year global-warming potential about 28 times that of CO<sub>2</sub>, making it more damaging per unit mass (statement 3 correct). Thus statements 1 and 3 are correct.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Kyoto\_Protocol?utm\_source=openai))

**Q12. Match List-I with List-II and select the correct answer using the codes given below the lists:**

**List I (National Park/Wild-life Sanctuary)**

- (A) Bondla Wildlife Sanctuary
- (B) Kangerghat National Park
- (C) Orang Sanctuary
- (D) Ushakothi Wildlife Sanctuary

**List II (State)**

- 1. Orissa
- 2. Assam
- 3. Chhattisgarh
- 4. Goa
- 5. Tripura

- (a) A-2 B-4 C-5 D-1
- (b) A-4 B-3 C-2 D-1**
- (c) A-2 B-3 C-5 D-4
- (d) A-4 B-1 C-2 D-3

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**Answer: (b)**

Bondla Wildlife Sanctuary is in Goa, Kanger (Kanger Ghati) National Park lies in Chhattisgarh, Orang Sanctuary/National Park is in Assam and Ushakothi Wildlife Sanctuary is in Odisha; therefore the correct matching is A-4, B-3, C-2, D-1, option (b).

([en.wikipedia.org](https://en.wikipedia.org/wiki/Bondla\_Wildlife\_Sanctuary?utm\_source=openai))

**Q82. Which one of the following is not a Biosphere Reserve?**

- (a) Agasthyamalai
- (b) Nallamalai**
- (c) Nilgiri
- (d) Panchmarhi

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**Answer: (b)**

Agasthyamalai, Nilgiri and Pachmarhi are all notified biosphere reserves under India's Man-and-the-Biosphere programme, designated in 2001, 1986 and 1999 respectively. Nallamalai is only a forest range/tiger-reserve tract in the Eastern Ghats and has never been declared a biosphere reserve; hence option (b) is the odd one out.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Agasthyamala\_Biosphere\_Reserve?utm\_source=openai))

**Q115. Virtual water trade is being looked at by experts as a solution to the world's water crisis. What does virtual water (VW) imply?**

- (a) Volume of heavy water required to replace ordinary water.
- (b) Volume of water required to produce a commodity or service.**
- (c) Volume of water saved by using rainwater harvesting.
- (d) Volume of water utilized by an effective flood control.

**Answer: (b)**

Virtual water is the hidden volume of freshwater used along a commodity's supply chain; trading products therefore amounts to trading the water embedded in their production. Hence option (b) correctly states that it is the volume of water required to produce a good or service.

([scribd.com](https://www.scribd.com/document/732020741/2005-GS1-Set-A-With-Answers))

**Q134. Consider the following statements:**

1. Silent Valley National Park is in the Nallamalai range.
2. Pathrakkadavu Hydroelectric Project is proposed to be built near the Silent Valley National Park.
3. The Kunthi river originates in Silent Valley's rainforests.

**Which of the statements given above is/are correct?**

- (a) 1 and 3
- (b) 2 only
- (c) 2 and 3**
- (d) 1, 2 and 3

**Answer: (c)**

Silent Valley National Park lies in the Western Ghats/Nilgiri Biosphere Reserve—not in the Nallamalai range—so statement 1 is false. The Pathrakkadavu (Kunthipuzha) hydro-electric project was indeed proposed just outside the park, and the Kunthipuzha (Kunthi) River rises inside Silent Valley's rainforest, so statements 2 and 3 are true. Therefore, only statements 2 and 3 are correct.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Silent\_Valley\_National\_Park?utm\_source=openai))

**Q138. Which one of the following statements is correct?**

- (a) The First Meeting of the Parties (MOP-1) to the Cartagena Protocol on Biosafety was held in the Philippines in 2004.
- (b) India is not a signatory to the Biosafety Protocol/Convention on Biological Diversity.
- (c) The Biosafety Protocol deals with genetically modified organisms.**
- (d) The United States of America is a member of the Biosafety Protocol/Convention on Biological Diversity.

**Answer: (c)**

The first Meeting of the Parties (COP/MOP-1) to the Cartagena Protocol on Biosafety took place in Kuala Lumpur, Malaysia, in February 2004, not in the Philippines. India ratified the Protocol in 2002-03 and is therefore a Party, whereas the United States has signed but never ratified the CBD/Protocol and is not a Party. The Protocol's objective is to regulate living-modified (genetically modified) organisms, making statement (c) the only correct option.

([press.un.org](https://press.un.org/en/2004/unep203.doc.htm?utm\_source=openai))

**Q147. Consider the following statements:**

1. The forest cover in India constitutes around 20 % of its geographical area. Out of the total forest cover, dense forest constitutes around 40 %.
2. The National Forestry Action Programme aims at bringing one-third of the area of India under tree/forest cover.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only**
- (c) Both 1 and 2
- (d) Neither 1 nor 2

---

**Answer: (b)**

India State of Forest Report-2003 put forest cover at about 20 % of the country's geographic area, but 'dense forest' (>40 % canopy) made up well over 50 % of that cover—not 40 %. Hence statement 1 is incorrect. The National Forestry Action Programme, drawn from the 1988 National Forest Policy, explicitly sets a long-term goal of bringing one-third ("H33 %") of India under tree/forest cover, so correct. Therefore only statement 2 is right. ([timesofindia.indiatimes.com](https://timesofindia.indiatimes.com/india/forest-survey-cover-up-but-density-down/articleshow/1178315.cms?utm\_source=openai))

— 2004 —

**Q12. Consider the following statements:**

1. Toothless mammals such as pangolins are not found in India.
2. Gibbon is the only ape found in India.

**Which of these statements given above is/are correct?**

- (a) 1 only
- (b) 2 only**
- (c) Both 1 and 2
- (d) Neither 1 nor 2

---

**Answer: (b)**

Indian pangolin (*Manis crassicaudata*) occurs in many parts of the country, so statement 1 is wrong. The Hoolock gibbon is the only ape native to India's north-eastern forests, so statement 2 is correct; hence only statement 2 holds (option b). ([timesofindia.indiatimes.com](https://timesofindia.indiatimes.com/city/mumbai/indian-pangolin-trapped-in-net-rescued-by-forest-dept-team-in-karad/articleshow/124999292.cms?utm\_source=openai))

**Q46. Tarun Bharat Sangh, an organization based in a village near Alwar (Rajasthan) has become famous because of**

- (a) Cultivation of genetically modified cotton
- (b) Rehabilitation of women victims of AIDS
- (c) Livelihood projects for destitute rural women
- (d) Rain-water harvesting**

**Answer: (d)**

Tarun Bharat Sangh, headquartered near Alwar, Rajasthan, is renowned for reviving traditional johads and other rain-water harvesting systems, leading to the restoration of several seasonal rivers; it is not primarily engaged in the other activities listed.

([en.wikipedia.org](https://en.wikipedia.org/wiki/Tarun\_Bharat\_Sangh?utm\_source=openai))

**Q65. Match List I (National Park/Sanctuary) with List II (State) and select the correct answer using the codes given below:**

**List I**

- (A) Kanger Ghati National Park**
- (B) Nagarhole National Park**
- (C) Kugti Wildlife Sanctuary**
- (D) Sultanpur Bird Sanctuary**

**List II**

- 1. Chhattisgarh**
- 2. Haryana**
- 3. Himachal Pradesh**
- 4. Karnataka**

**Codes:**

**A B C D**

- (a) 3 2 1 4
- (b) 1 4 3 2**
- (c) 3 4 1 2
- (d) 1 2 3 4

**Answer: (b)**

Kanger Ghati (Kanger Valley) National Park is in Chhattisgarh; Nagarhole National Park in Karnataka; Kugti Wildlife Sanctuary in Himachal Pradesh; and Sultanpur Bird Sanctuary in Haryana. Thus the correct A-B-C-D pairing is 1-4-3-2, i.e., option (b).

([en.wikipedia.org](https://en.wikipedia.org/wiki/Kanger\_Valley\_National\_Park?utm\_source=openai))

**Q107. Match List I (Biosphere Reserve) with List II (States) and select the correct answer using the codes given below:**

**List I**

- (A) Simlipal
- (B) Dehong Deband
- (C) Nokrek
- (D) Kanchenjunga

**List II**

- 1. Sikkim
- 2. Uttaranchal
- 3. Arunachal Pradesh
- 4. Orissa
- 5. Meghalaya

**Codes:**

- (a) A 1 B 3 C 5 D 4
- (b) A 4 B 5 C 2 D 1
- (c) A 1 B 5 C 2 D 4
- (d) A 4 B 3 C 5 D 1**

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**Answer: (d)**

Simlipal Biosphere Reserve is located in Odisha, Dehang-Debang (Dihang-Dibang) in Arunachal Pradesh, Nokrek in Meghalaya, and the Khangchendzonga (Kanchenjunga) Biosphere Reserve in Sikkim; thus the correct matching is A-4, B-3, C-5, D-1, i.e. option (d).

([en.wikipedia.org](https://en.wikipedia.org/wiki/Simlipal\_National\_Park?utm\_source=openai))

**Q135. Amongst the following Indian States which one has the minimum total forest cover?**

- (a) Sikkim
- (b) Goa
- (c) Haryana**
- (d) Kerala

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**Answer: (c)**

Haryana has the smallest absolute forest cover ("H1 600 km<sup>2</sup>, about 3.6 % of its area) and is listed; Goa, Sikkim and Kerala—though differing in size—each have a considerably larger forested area.([hindustantimes.com](https://www.hindustantimes.com/cities/chandigarh-news/haryanas-forest-cover-1-603-sq-km-as-per-2021-report-101721673497335.html?utm\_source=openai))

**Q19. The Genetic Engineering Approval Committee, whose permission is required for cultivation of any genetically modified crop such as Bt-Cotton in India, is under the Union Minister of**

- (a) Agriculture
- (b) Environment and Forests**
- (c) Commerce and Industry
- (d) Rural Development

**Answer: (b)**

The Genetic Engineering Approval (now Appraisal) Committee (GEAC), which authorises cultivation of genetically modified crops such as Bt-cotton, functions under the Ministry of Environment, Forest and Climate Change (earlier Ministry of Environment & Forests). It is not under the Ministries of Agriculture, Commerce, or Rural Development.

([geacindia.gov.in](https://geacindia.gov.in/about-geac-india.aspx?utm\_source=openai))

**Q67. Consider the following animals of India:**

1. Crocodile
2. Elephant

**Which of these is/are endangered species?**

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2**
- (d) Neither 1 nor 2

**Answer: (c)**

Both listed animals qualified as endangered in 2003. The Asian (Indian) elephant has been on the IUCN Red List as Endangered since 1986, and the gharial (a crocodilian) was—and remains—Critically Endangered; therefore crocodiles in India include an endangered species. Hence option (c) “Both 1 and 2” is correct.

**Q99. Consider the following statements:**

1. The common blue green algae *Spirogyra* and *Ulothrix* are found in both fresh water ponds and oceans.
2. The chameleon can look ahead with one eye, and at the same time look behind with another.

**Which of these statements is/are correct?**

- (a) Only 1
- (b) Only 2**
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer: (b)**

*Spirogyra* is a filamentous green alga found exclusively in freshwater habitats, so it is not common to both ponds and oceans, making statement 1 incorrect. Chameleons can move their two eyes independently and view different directions simultaneously, so statement 2 is correct; therefore only statement 2 is right.

([britannica.com](https://www.britannica.com/science/Spirogyra?utm\_source=openai))

**Q106. Assertion (A): Coal-based thermal power stations contribute to acid rain.**

**Reason (R): Oxides of carbon are emitted when the coal burns.**

- (a) Both A and R are individually true and R is the correct explanation of A
- (b) Both A and R are individually true but R is NOT the correct explanation of A**
- (c) A is true but R is false
- (d) A is false but R is true

**Answer: (b)**

Burning coal in thermal power plants releases large amounts of SO<sub>2</sub> and NO<sub>x</sub> that react with water to form sulphuric and nitric acids, the chief constituents of acid rain, so the assertion is true. The reason is true in itself—coal combustion also emits CO<sub>2</sub> and CO—but oxides of carbon are not the primary cause of acid rain; therefore R does not explain A.

([iasexamportal.com](https://iasexamportal.com/paper/IAS\_General\_Studies\_Prelims\_Paper\_2003\_part-1))

**Q110. Assertion (A): Unlike temperate forests, the tropical rain forests, if cleared, can yield productive farm-land that can support intensive agriculture for several years even without chemical fertilizers.**

**Reason (R): The primary productivity of the tropical rain forest is very high when compared to that of the temperate forests.**

- (a) Both A and R are individually true and R is the correct explanation of A
- (b) Both A and R are individually true but R is NOT the correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true**

**Answer: (d)**

Most tropical rainforest soils are heavily leached, acidic and nutrient-poor; once forest cover is removed, fertility declines rapidly and the land supports crops for only a short time, so the assertion is false. The reason is true—tropical rainforests have very high primary productivity due to warm, moist conditions—but high biomass production does not translate into long-term soil fertility after clearing.

([iasexamportal.com](https://iasexamportal.com/paper/IAS\_General\_Studies\_Prelims\_Paper\_2003\_part-1))

**Q118. Which one of following is produced during the formation of photochemical smog?**

- (a) Hydrocarbons
- (b) Nitrogen Oxides
- (c) Ozone**
- (d) Methane

**Answer: (c)**

Ground-level ozone (O<sub>3</sub>) is a secondary pollutant generated by the reaction of nitrogen hydrocarbons in sunlight and is the key component of photochemical smog; hydrocarbons and NO<sub>x</sub> are precursors, not main products, and methane is unrelated. ([explore.britannica.com](https://explore.britannica.com/explore/savingearth/air-pollution?utm\_source=openai))

**Q74. Which one of the following animals is monogamous?**

- (a) **Wolf**
- (b) Walrus
- (c) Seal
- (d) Deer

**Answer: (a)**

Gray wolves form long-term pair bonds; the alpha male and female usually remain together for life, making the species functionally monogamous. Walrus, seals and most deer species are polygynous with one male mating with several females. ([britannica.com](https://www.britannica.com/list/6-animal-species-that-mate-for-life?utm\_source=openai))

**Q126. A World Summit with representation from all the countries will be held in Johannesburg in September 2002 on the subject of**

- (a) AIDS control
- (b) Global terrorism
- (c) Human rights
- (d) **Sustainable development**

**Answer: (d)**

The UN-convened gathering in Johannesburg from 26 August–4 September 2002 was officially called the World Summit on Sustainable Development (WSSD), held to review progress a decade after the 1992 Rio Earth Summit. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Earth\_Summit\_2002?utm\_source=openai)) Hence option (d) Sustainable development.

**Q136. Consider the following ecosystems:**

1. Taiga
2. Tropical evergreen
3. Tropical deciduous
4. Tundra

**The correct sequence in decreasing order of the albedo values of these ecosystems is**

- (a) 1, 4, 3, 2
- (b) 4, 1, 2, 3
- (c) **4, 1, 3, 2**
- (d) 1, 4, 2, 3

**Answer: (c)**

Albedo decreases from highly reflective snow-covered or barren surfaces to dark dense forests. Tundra (snow/ice cover) has the highest albedo, followed by Taiga (coniferous forest with seasonal snow), Tropical Deciduous forest (lighter canopy during dry season) and finally the very dark Tropical Evergreen forest. Hence the decreasing order is  $4 > 1 > 3 > 2$ , i.e., option (c). ([scribd.com](https://www.scribd.com/document/819879928/2002-QP-AW))

**Q35. Consider the following statements regarding environment issues of India:**

**I. Gulf of Mannar is one of the biosphere reserves.**

**II. The Ganga Action Plan, phase II has been merged with the National River Conservation Plan.**

**III. The National Museum of Natural History at New Delhi imparts nonformal education in environment and conservation.**

**IV. Environmental Information System (ENVIS) acts as a decentralised information network for environmental information.**

**Which of these statements are correct?**

(a) I, II and IV

**(b) I, II, III and IV**

(c) II and III

(d) I, III and IV

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**Answer: (b)**

All four statements are correct: (I) Gulf of Mannar was designated a Biosphere Reserve in 1989. (II) Ganga Action Plan Phase II was merged with the National River Conservation Plan in 1996. (III) The National Museum of Natural History (NMNH), New Delhi functions as a non-formal environmental education centre. (IV) ENVIS is a decentralised national network of thematic and state hubs for environmental information. Hence option (b) (I, II, III & IV). ([en.unesco.org](https://en.unesco.org/silk-road/silk-road-themes/biosphere-reserve/gulf-mannar?utm\_source=openai))

**Q52. Match List I with List II and select the correct answer using the codes given below the Lists:**

**List I (Important Day)**

**I. World Environment Day**

**II. World Forestry Day**

**III. World Habitat Day**

**IV. World Ozone Day**

**List II (Date)**

**A) March 20**

**B) June 5**

**C) September 16**

**D) October 3**

**E) December 10**

(a) I-B, II-A, III-D, IV-E

(b) I-A, II-B, III-D, IV-C

(c) I-A, II-B, III-C, IV-D

**(d) I-B, II-A, III-D, IV-C**

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**Answer: (d)**

World Environment Day is observed on 5 June (B); World Forestry Day (earlier called World Forest Day) has traditionally been kept around the spring equinox—taken here as 20 March (A); World Habitat Day is marked on the first Monday of October—3 October was the observance date taken for 2001 (D); and World Ozone Day is fixed on 16 September (C). Therefore the correct matching is I-B, II-A, III-D, IV-C (option d). ([unep.org](https://www.unep.org/events/un-day/world-environment-day-2025?utm\_source=openai))

**Q96. A class of animals known as Marsupials is a characteristic feature of**

- (a) Africa
- (b) Australia**
- (c) South America
- (d) South-east Asia

**Answer: (b)**

Marsupials (pouched mammals such as kangaroos, koalas, wallabies, etc.) are almost entirely endemic to Australia and its surrounding islands; very few species occur elsewhere. Hence Australia is the characteristic region. Africa, South America and South-East Asia have placental mammals or only a handful of opossum-type marsupials, not the dominant marsupial fauna seen in Australia. ([edurev.in](https://edurev.in/t/235076/UPSC-Previous-Year-Questions--Prelims--World-Geography-2?utm\_source=openai))

— 2000 —

**Q35. Match List I (Power generation plant) with List II (Feed material) and select the correct answer using the codes given below the Lists:**

**List I**

- I. M/s Gowthami Solvents Oil Limited, Andhra Pradesh**
- II. M/s KM. Sugar Mills, Uttar Pradesh**
- III. M/s Satia Paper Mills, Punjab**
- IV. M/s Al Kabeer Exports Limited, Andhra Pradesh**

**List II**

- A) Rice husk**
- B) Slaughter-house waste**
- C) Distillery spent wash**
- D) Black liquor**

**Codes:**

- (a) I-C, II-A, III-B, IV-D
- (b) I-C, II-A, III-D, IV-B
- (c) I-A, II-C, III-D, IV-B**
- (d) I-A, II-C, III-B, IV-D

**Answer: (c)**

• Gowthami Solvents Oil Ltd. (A.P.) runs a rice-husk-fired cogeneration plant. • KM Sugar Mills (U.P.) uses distillery spent-wash for biogas-based power. • Satia Paper Mills (Punjab) fires black-liquor from the pulp mill recovery cycle. • Al Kabeer Exports (A.P.) converts slaughter-house waste to energy. Hence the correct matching is I-A, II-C, III-D, IV-B. ([examrobot.com](https://examrobot.com/content/match-list-i-power-generation-plant-list-ii-feed-material-and-select-correct-answer-using?utm\_source=openai))

**Q126. Within biological communities, some species are important in determining the ability of a large number of other species to persist in the community. Such species are called**

- (a) **Keystone species**
- (b) Allopatric species
- (c) Sympatric species
- (d) Threatened species

**Answer: (a)**

A keystone species exerts a disproportionately large influence on the survival of many other species in its community; its removal can collapse ecosystem structure. The other terms describe species based on geographic distribution (allopatric, sympatric) or conservation status (threatened). ([licchavilyceum.com](http://licchavilyceum.com/upsc-civil-services-prelims-2000-solved-question-paper/?utm\_source=openai))

— 1999 —

**Q36. The minimum land area recommended for forest cover to maintain proper ecological balance in India is**

- (a) 25%
- (b) **33%**
- (c) 43%
- (d) 53%

**Answer: (b)**

The National Forest Policy (1988) sets a normative goal that at least 33 % of India's geographical area should be under forest/tree cover (with 66 % in hilly regions) to maintain ecological balance, making 33 % the minimum recommended figure. ([scribd.com](https://www.scribd.com/document/465263088/1999-upsc-prelims?utm\_source=openai))

**Q54. "India has the largest population of the Asian X. Today, there are just about 20,000 to 25,000 X in their natural habitat spreading across the evergreen forests, dry thorn forests, swamps and grasslands. Their prime habitats are, however, the moist deciduous forests. The X population in India ranges from Northwest India where they are found in the forest divisions of Dehradun, Bijnor and Nainital districts of UP to the Western Ghats in the states of Karnataka and Kerala and in Tamil Nadu. In Central India, their population is distributed in southern Bihar and Orissa. In the East, they are seen in North Bengal, Assam and a few other states." The animal 'X' referred to in this quotation is**

- (a) Lion
- (b) **Elephant**
- (c) Tiger
- (d) One horned rhinoceros

**Answer: (b)**

The description matches the Asian elephant: in the late-1990s India sheltered roughly 20,000–25,000 elephants, the largest national share of the global Asian elephant population. Their range extends from the Himalayan foothills of Uttar Pradesh through the Western Ghats (Karnataka, Kerala, Tamil Nadu), central India (Bihar–Odisha) and the North-East—exactly the areas listed. Tigers (~3,000), lions (~300) and one-horned rhinoceros (~1,500) were far fewer in number and have much narrower distributions. ([licchavilyceum.com](https://licchavilyceum.com/upsc-civil-services-prelims-1999-solved-question-paper/))

UPSC 1999

Environment &amp; Ecology › Protected Areas &amp; Wildlife

moderate

**Q73. The first marine sanctuary in India, having within its bounds coral reefs, Mollusca, dolphins, tortoises and various kinds of sea birds, has been established in**

- (a) Sundarbans
- (b) Chilka Lake
- (c) Gulf of Kachchh**
- (d) Lakshadweep

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**Answer: (c)**

India's first marine protected area—the Gulf of Kachchh Marine Sanctuary (notified 1980, core declared National Park 1982)—protects coral reefs, molluscs, dolphins, sea turtles and numerous seabirds along the Jamnagar coast of Gujarat. Sundarbans, Chilka and Lakshadweep contain rich marine life but were notified later or under different categories, so do not match the description of the country's first marine sanctuary. ([earthobservatory.nasa.gov](https://www.earthobservatory.nasa.gov/images/148286/kutchs-coral-reefs?utm\_source=openai))

UPSC 1999

Environment &amp; Ecology › Environmental Governance &amp; Legislation

moderate

**Q77. Which one of the following legislations does not deal with the protection of environment?**

- (a) The Water (Cess) Act, 1977
- (b) The Forest (Conservation) Act, 1980
- (c) The Public Liability Insurance Act, 1991
- (d) The Port Laws Amendment Act, 1997**

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**Answer: (d)**

The Port Laws (Amendment) Act, 1997 amended port-administration statutes (e.g., Major Port Trusts Act) to create bodies such as the Tariff Authority for Major Ports; its purpose is regulatory/economic, not environmental. By contrast, the Water (Prevention & Control of Pollution) Cess Act 1977 funds pollution-control boards, the Forest (Conservation) Act 1980 restricts diversion of forest land, and the Public Liability Insurance Act 1991 provides immediate relief for accidents involving hazardous substances—all squarely aimed at environmental protection. ([uttarpradesh.pscnotes.com](https://uttarpradesh.pscnotes.com/uppcs-prelims/which-one-of-the-following-legislations-does-not-deal-with-the-protect/?utm\_source=openai))

UPSC 1999

Environment &amp; Ecology › Sustainable Agriculture &amp; Forestry

easy

**Q121. Which one of the following agricultural practices is eco-friendly?**

- (a) Organic farming**
- (b) Shifting cultivation
- (c) Cultivation of high yielding varieties
- (d) Growing plants in glass-houses

---

**Answer: (a)**

Organic farming avoids synthetic fertilisers and pesticides, maintains soil health and biodiversity, and thus has the least ecological footprint compared with shifting cultivation, HYV monoculture, or energy-intensive glass-house cultivation. ([licchavilyceum.com](https://licchavilyceum.com/upsc-civil-services-prelims-1999-solved-question-paper/))

UPSC 1999

Environment & Ecology › Ecosystems & Ecology Concepts

easy

**Q123. Which one of the following is a useful functional association between fungi and the roots of higher plants?**

- (a) Biofertilizer
- (b) Coralloid root
- (c) Lichen
- (d) Mycorrhiza**

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**Answer: (d)**

Mycorrhiza is a mutualistic association where fungal hyphae colonise plant roots, increasing water and mineral uptake; biofertilisers and lichens are different associations, while coralloid roots involve cyanobacteria in cycads.

([licchavilyceum.com](https://licchavilyceum.com/upsc-civil-services-prelims-1999-solved-question-paper/))

— 1998 —

UPSC 1998

Environment & Ecology › Sustainable Agriculture & Forestry

easy

**Q22. Indonesian forest fire in 1997 was caused by**

- (a) greenhouse effect
- (b) depletion of the ozone layer
- (c) El Niño effects
- (d) None of the above**

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**Answer: (d)**

The 1997 Indonesian fires were started mainly by deliberate slash-and-burn clearing of land for agriculture and plantations; drought only helped them spread. Greenhouse warming, ozone depletion and the El Niño phenomenon were contributory factors at best, but not the proximate cause, so “None of the above” is correct. ([selfstudyhistory.com](https://selfstudyhistory.com/2015/04/04/prelims-ias-general-studies-solved-paper-with-explanations-1998-part-2/))

UPSC 1998

Environment & Ecology › International Environmental Treaties & Summits

easy

**Q42. According to Meadows (1972), if the present trends in world population, industrialisation, pollution, food production and resource depletion continue unchanged, the “Limits to Growth” on our planet will be reached in the next**

- (a) 50 years
- (b) 100 years**
- (c) 150 years
- (d) 200 years

---

**Answer: (b)**

The 1972 ‘Limits to Growth’ study concluded that if existing trends in population, industrialisation, pollution, food production and resource use continued, “the limits to growth on this planet will be reached sometime within the next one hundred years.”

([ratical.org](https://ratical.org/corporations/limit2growth.html?utm\_source=openai))

UPSC 1998

Environment & Ecology › Water & Wetland Conservation

easy

**Q54. Estuaries possess distinct blooms of excessive growth of a pigmented dinoflagellate. These blooms are called**

- (a) red tides
- (b) sea tides
- (c) black tides
- (d) sea flowers

**Answer: (a)**

Massive blooms of pigmented dinoflagellates in estuaries discolour the water and are called "red tides." The other terms (sea tides, black tides, sea flowers) are not standard ecological nomenclature for these blooms. ([selfstudyhistory.com](https://selfstudyhistory.com/2015/04/05/prelims-ias-general-studies-solved-paper-wit-h-explanations-1998-part-6/))

UPSC 1998

Environment & Ecology › Water & Wetland Conservation

easy

**Q65. Some people in Manipur live in houses built on floating islands of weeds and decaying vegetation held together by suspended silt. These islands are called**

- (a) Tipis
- (b) Barkhans
- (c) Phumdis
- (d) Izba

**Answer: (c)**

The floating masses of vegetation, soil and organic matter on Manipur's Loktak Lake are locally called phumdis; villagers build huts on these buoyant islands. Terms like tipis, barkhans and izba refer to other unrelated structures or landforms. ([science.nasa.gov](https://science.nasa.gov/earth/earth-observatory/the-floating-islands-of-india-92090/?utm\_source=openai))

UPSC 1998

Environment & Ecology › Sustainable Agriculture & Forestry

moderate

**Q72. Forest areas have been labelled as 1, 2, 3 and 4 in the rough outline map given. Among these, those which were threatened in 1997 by a serious epidemic include**

- (a) Teak forests of 3 and 4
- (b) Oak forests of 1 and sal forests of 2
- (c) Sal forests of 3
- (d) Sandalwood forests of 4

**Answer: (c)**

The 1997 outbreak of the sal-heartwood borer (*Hoplocerambyx spinicornis*) devastated *Shorea robusta* stands in Madhya Pradesh/Chhattisgarh. On the UPSC map this sal belt is marked as area 3, so only the sal forests of 3 were under serious epidemic threat. Other listed forest types (oak, teak, sandalwood) were not hit by that 1997 epidemic. ([edurev.in](https://edurev.in/t/203268/Geography-of-India-Solved-Questions--1995-2002-?utm\_source=openai))

UPSC 1998

Environment & Ecology › Environmental Governance & Legislation

easy

**Q92. 'Eco mark' is given to the Indian products that are**

- (a) pure and unadulterated
- (b) rich in proteins
- (c) environment friendly**
- (d) economically viable

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**Answer: (c)**

India's 'Ecomark', instituted in 1991 and awarded by BIS/MoEFCC, certifies products that meet prescribed criteria for being environmentally friendly throughout their life-cycle. It is not related to purity, nutrition or price. ([en.wikipedia.org](https://en.wikipedia.org/wiki/Ecomark?utm\_source=openai))

UPSC 1998

Environment & Ecology › International Environmental Treaties & Summits

easy

**Q101. World Environment Conference to discuss global warming was held in 1997 in**

- (a) Stockholm
- (b) Rio de Janeiro
- (c) Paris
- (d) Kyoto**

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**Answer: (d)**

The 3rd Conference of Parties (COP-3) to the UNFCCC, which produced the Kyoto Protocol on greenhouse-gas emission reductions, was held in Kyoto, Japan, in December 1997—not in Stockholm, Rio or Paris. ([scribd.com](https://www.scribd.com/document/731910048/1998?utm\_source=openai))

UPSC 1998

Environment & Ecology › Water & Wetland Conservation

easy

**Q102. The water pollution in river is measured by the dissolved amount of**

- (a) Chlorine
- (b) Ozone
- (c) Nitrogen
- (d) Oxygen**

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**Answer: (d)**

River water quality is commonly assessed by measuring the concentration of dissolved oxygen (DO); low DO indicates high organic pollution and poor aquatic life support. Chlorine, ozone and nitrogen are not standard primary indicators of riverine pollution levels.

([scribd.com](https://www.scribd.com/document/731910048/1998?utm\_source=openai))

**Q120. A tree species in Mauritius failed to reproduce because of the extinction of a fruit-eating bird. Which one of the following was that bird?**

- (a) Dove
- (b) Dodo**
- (c) Condor
- (d) Skua

**Answer: (b)**

On Mauritius the Calvaria (tambalacoque) tree stopped regenerating after the extinction of the flightless fruit-eating Dodo bird, which had dispersed and scarified its seeds. Therefore the bird was the Dodo (option b). ([lichavilyceum.com](https://lichavilyceum.com/upsc-civil-services-prelims-1998-solved-question-paper/?utm\_source=openai))

— 1997 —

**Q120. Which one of the following organisms is likely to show the highest concentration of DDT once it has been introduced into the ecosystem?**

- (a) Grasshopper
- (b) Toad
- (c) Snake**
- (d) Cattle

**Answer: (c)**

DDT biomagnifies up the food chain; each trophic level accumulates higher residues. Among the given organisms the snake, a tertiary consumer that preys on toads and other secondary consumers, occupies the highest trophic level, so it shows the greatest DDT concentration. ([aspireias.com](https://www.aspireias.com/upsc-general-study-10years-paper/1997?utm\_source=openai))

— 1996 —

**Q39. Which one of the following regions of India is now regarded as an 'ecological hot spot'?**

- (a) Western Himalayas
- (b) Eastern Himalayas
- (c) Western Ghats**
- (d) Eastern Ghats

**Answer: (c)**

Conservation International recognises the Western Ghats of peninsular India as one of the world's biodiversity hotspots because of its exceptional endemic species richness and high degree of threat. Among the regions listed, only the Western Ghats unequivocally enjoy this global 'ecological hotspot' status, making option (c) correct. ([lichavilyceum.com](https://lichavilyceum.com/upsc-civil-services-prelims-1996-solved-question-paper/?utm\_source=openai))

**Q49. Assertion (A): Mangroves are very specialised forest ecosystems of tropical and subtropical regions bordering certain sea coasts.**

**Reason (R): They stabilise the shoreline and act as bulwark against encroachments by sea. In the context of the above two statements, which one of the following is correct?**

- (a) Both A and R are true and R is the correct explanation of A**
- (b) Both A and R are true but R is not a correct explanation of A
- (c) A is true but R is false
- (d) A is false but R is true

---

**Answer: (a)**

Both statements are true—mangroves are specialised coastal forests of tropical/sub-tropical zones and their prop-root networks trap sediments, reducing wave energy and protecting shorelines—so R correctly explains A. ([lichavilyceum.com](https://lichavilyceum.com/upsc-civil-services-prelims-1996-solved-question-paper/?utm\_source=openai))

**Q63. Consider the following programmes:**

**I. Afforestation and development of wastelands.**

**II. Reforestation and replantation in existing forests.**

**III. Encouraging the wood substitutes and supplying other types of fuel.**

**IV. Promotion of wide use of insecticides and pesticides to restrict the loss of forest area from degradation caused by pests and insects.**

**The National Forest Policy of 1988 includes**

- (a) I, II, III and IV
- (b) II and IV
- (c) I, III and IV
- (d) I, II and III**

---

**Answer: (d)**

The 1988 National Forest Policy stresses (I) large-scale afforestation of degraded/ wastelands, (II) reforestation of existing forests, and (III) encouraging substitution of wood and alternative fuels. It does not advocate the 'wide use of insecticides and pesticides'—it speaks only of scientific protection from fires and pests—so statement IV is excluded. Hence I, II and III only are covered (option d). ([edurev.in](https://edurev.in/t/203446/Environment--Ecology--Biodiversity-Climate-Change-?utm\_source=openai))

**Q106. Physico-chemical characteristics of water in water sources undergo changes due to**

- (a) aquatic macrophytes
- (b) aquatic fungi
- (c) effluents**
- (d) evapotranspiration

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**Answer: (c)**

Industrial and domestic effluents alter temperature, pH, dissolved oxygen and chemical composition of natural waters, making them the prime cause of physico-chemical changes in water bodies, unlike biotic factors or evapotranspiration which have limited impact. ([lichavilyceum.com](https://lichavilyceum.com/upsc-civil-services-prelims-1996-solved-question-paper/))

**Q107. Ecologists have so far found and certified a large number of species in the plant and animal kingdoms. In terms of members, the largest group identified so far is among the**

- (a) Fungi
- (b) Plants
- (c) Insects**
- (d) Bacteria

**Answer: (c)**

Over one million insect species have been formally described—far exceeding recorded species of fungi, plants or bacteria—so insects constitute the largest certified group of organisms. ([lichavilyceum.com](https://lichavilyceum.com/upsc-civil-services-prelims-1996-solved-question-paper/))

— 1995 —

**Q32. “Monoculture of commercially viable trees is destroying the unique natural profile of ..... Thoughtless exploitation of timber, deforesting vast tracts for palm cultivation, destruction of mangroves, illegal logging by tribals and poaching only compound the problem. Fresh water pockets are fast drying up due to deforestation and destruction of mangroves.” The place referred to in this quotation is**

- (a) Sundarbans**
- (b) Kerala Coast
- (c) Orissa Coast
- (d) Andaman and Nicobar Islands

**Answer: (a)**

The quotation describes large-scale timber extraction, destruction of mangroves and drying of freshwater pockets—characteristic ecological threats faced by the Sundarbans mangrove delta, not the other listed coasts or islands. ([lichavilyceum.com](https://lichavilyceum.com/upsc-civil-services-prelims-1995-solved-question-paper/))

**Q69. Which one of the following does not belong to biosphere reserves set up so far?**

- (a) Great Nicobar
- (b) Sunderbans
- (c) Nanda Devi
- (d) Gulf of Kachchh**

**Answer: (d)**

By 1995 eight biosphere reserves had been notified: Nilgiri (1986), Nanda Devi (1988), Nokrek (1988), Great Nicobar (1989), Gulf of Mannar (1989), Manas (1989), Sunderbans (1989) and Simlipal (1994). The Gulf of Kachchh had not been designated, so it is the odd one out. ([lichavilyceum.com](https://lichavilyceum.com/upsc-civil-services-prelims-1995-solved-question-paper/))

**Q117. Which one of the following fuels causes minimum environmental pollution?**

- (a) Diesel
- (b) Coal
- (c) Hydrogen**
- (d) Kerosene

**Answer: (c)**

Hydrogen combustion produces only water vapour and no carbon-containing exhaust, so it releases virtually no CO<sub>2</sub>, SO<sub>2</sub>, particulates or other atmospheric pollutants, whereas diesel, coal and kerosene release greenhouse gases and aerosols when burnt. Hence hydrogen is the cleanest of the listed fuels. ([id.scribd.com](https://id.scribd.com/document/731910046/1995?utm\_source=openai))

**Q128. “The final Agent Orange raid in Vietnam took place in 1970.... areas have begun to bloom again. But 19 years after the war’s end, it seems plain that Agent Orange is killing and maiming human beings, something it never intended to do. The apparent toxic fall-out from those clouds ... is a crop of human miseries including cancers, miscarriages and birth defects — that may persist for decades.” The offensive substance referred to in the above quotation is**

- (a) DDT used as insecticide
- (b) a complex mixture of herbicides and weedicides used to increase agricultural output in the then South Vietnam under the US aid programme
- (c) a complex mixture of DDT and other insecticides used as aerial sprays for protection against malaria and other tropical diseases
- (d) dioxin used as defoliants**

**Answer: (d)**

Agent Orange was a Vietnam-war defoliant whose toxic constituent was the dioxin TCDD; its long-term fallout includes cancers, miscarriages and birth defects, exactly as described. Options (a)–(c) involve DDT or agricultural sprays, none of which fits the historical ‘Agent Orange’ episode. ([lichavilyceum.com](https://lichavilyceum.com/upsc-civil-services-prelims-1995-solved-question-paper/))

**Q145. Consider the table given below providing details of traffic volume per hour for four locations (showing total traffic volume, % of heavy vehicles, average noise level in dB(A) and noise-pollution level in dB(A)). When the total traffic volume is the same, the factor(s) which affect(s) the noise-pollution level is/are**

- (a) % of heavy vehicles**
- (b) noise-pollution level and average noise level
- (c) average noise level and % of heavy vehicles
- (d) indeterminable on the basis of details given

**Answer: (a)**

Comparing locations I and III (identical total traffic and identical average noise level), the location with the higher percentage of heavy vehicles shows the higher noise-pollution level, isolating ‘% of heavy vehicles’ as the determining factor. Average noise level is already held constant, so option (a) alone fits. ([lichavilyceum.com](https://lichavilyceum.com/upsc-civil-services-prelims-1995-solved-question-paper/?utm\_source=openai))