



**TOPPERS CHOICE**



5 subject-specific questions daily to comprehensively prepare for UPSC PRELIMS 2024.

**ENVIRONMENT**

**May 2023 to July 2023**

Date - 5th May 2023

1. Consider the following statements regarding caterpillar fungus

1. It is listed as Endangered on the IUCN Red List.
2. It is found in the Tibetan plateau only.
3. It is also known as Himalayan Viagra.

Which of the above statements is/are correct?

- A. 1 and 2 only
- B. 2 only
- C. 3 only
- D. 2 and 3 only

Answer: C

Explanation:



**Caterpillar Fungus**

- Ophiocordyceps sinensis
- It is a **fungal parasite of larvae** (caterpillars) that belongs to the ghost moth.
- Aka **Himalayan gold**.
- It is a caterpillar fungus **endemic to the Himalayan and Tibetan plateau**.

- In India, it is primarily found in **Uttarakhand** in the higher reaches of districts Pithoragarh and Chamoli.

- IUCN Red List - Vulnerable

**Caterpillar Fungus - Uses**

- For centuries, caterpillar fungus has seemingly been used in traditional Tibetan and Chinese medicine as a tonic, as a therapeutic medicine for **lung, liver and kidney problems**.
- In recent time the species has been widely traded as an **aphrodisiac** and a powerful tonic.

2. Which of the following protected areas are correctly matched with the mountain ranges associated with them?

1. Kuno Palpur NP - Maikal Hills
2. Satpura NP - Vindhya Hills
3. Panna NP - Mahadeo Hills

Choose the correct option from below:

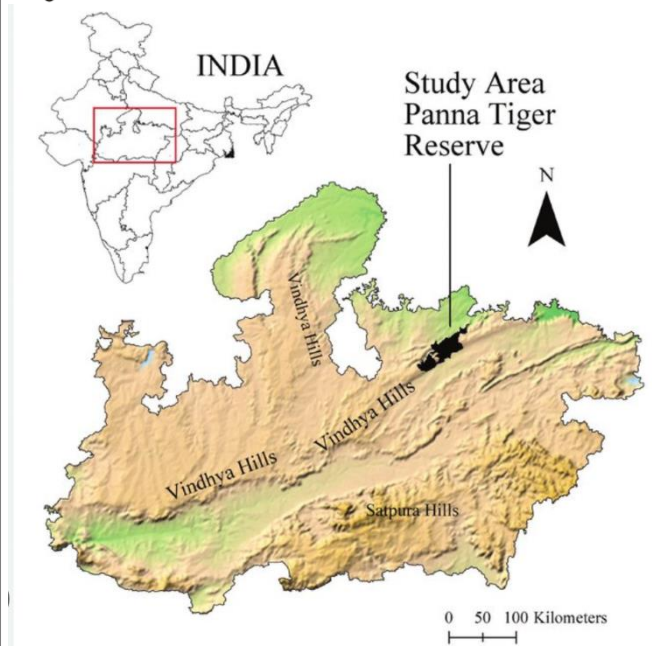
- A. 1 only
- B. 2 only
- C. 3 only
- D. None of the above.

Answer: D

Explanation:

**Protected Areas in MP**

- Kanha NP - Maikal Hills
- Satpura NP - Mahadeo Hills
- Panna NP - Vindhya Hills



- Dandeli Elephant Reserve in Karnataka, Singphan Elephant Reserve in Nagaland, Agasthiyamalai Elephant Reserve in Tamil Nadu and Terai Elephant Reserve (Uttar Pradesh) are the most recent additions to India's Elephant Reserves.
- Elephant Reserves are formally notified by the respective **State Government**.
- The President of India, inaugurated the Gaj Utsav-2023 at the **Kaziranga National Park**.

**3. Consider the following statements regarding Elephant Reserves**

1. India is home to 33 Elephant Reserves in 16 States.
2. They are formally notified by the respective State Government.
3. Highest number of elephant reserves are found in Karnataka.

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

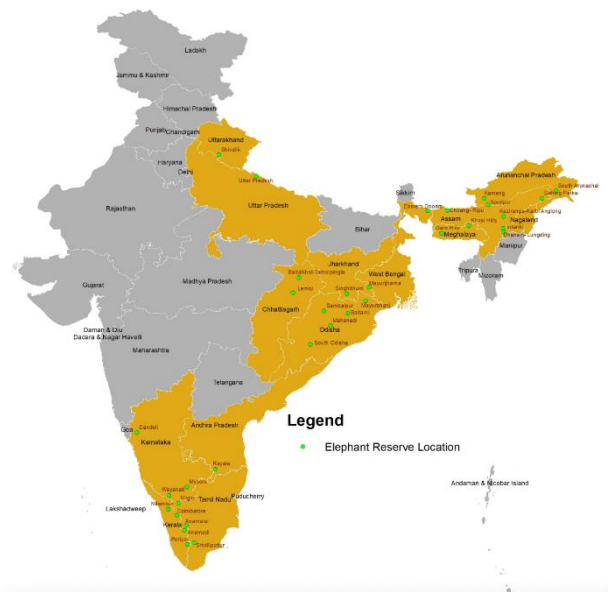
- A. 1 and 2 only
- B. 2 only
- C. 3 only
- D. 2 and 3 only

**Answer: B**

**Explanation:**

**Elephant Reserves**

- India is home to **33 Elephant Reserves** in **14 States**.



**Elephants**

- Elephants are classified into **three species**: African bush elephants, African forest elephants, and Asian elephants.
- Asian elephants are classified into **three subspecies**: Indian, Sumatran, and Sri Lankan.
- **Endangered** according to the IUCN Red List.
- **Schedule I** of the Wildlife (Protection) Act of 1972.



- Appendix I of CITES

**4. Consider the following statements regarding Wildlife (Protection) Amendment Act 2022**

1. It reduces the number of schedules from Six to Four.
2. The Bill allows for Commercial Trade in Live Elephants.

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

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2


**Answer: C**

**Explanation:**

**Wildlife (Protection) Amendment Act 2022**


- Wildlife (Protection) Amendment Act, 2022 which seeks to to amend the Wild Life (Protection) Act, 1972.
- Ensure better management of protected areas and rationalise schedules which list out species under the Wildlife (Protection) Act, 1972.
- Implement the provisions of the CITES.
- Provides much more power at the hands of the Central Government.
- The Bill allows for Commercial Trade In Live Elephants.
- Increases the Penalties.
- Reduces the number of schedules from Six (currently) to Four.


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Date - 11<sup>th</sup> May 2023

5. Which among the following wildlife sanctuary is referred to as the Amazon of East?

- A. Kolleru Wildlife Sanctuary
- B. Deepor Beel Wildlife Sanctuary
- C. Dehing Patkai Wildlife Sanctuary
- D. Nambor Wildlife Sanctuary

**Answer: C**

**Explanation:**

**Dehing Patkai**

- It is located within the larger Dehing Patkai Elephant Reserve, which spreads across the coal and oil-rich districts of Upper Assam (Dibrugarh and Tinsukia districts).
- The Dehing Patkai Wildlife Sanctuary is also known as the Jeypore Rainforest.
- Dehing is the name of the river that flows through this forest and Patkai is the hill at the foot of which the sanctuary lies.
- It is famous for Assam Valley Tropical Wet Evergreen Forests bordering Arunachal Pradesh.
- Rare fauna found in the region include Chinese pangolin, flying fox, wild pig, sambar, barking deer, gaur, serow and Malayan giant squirrels.

It is the only sanctuary in India which is home to seven different species of wild cats - tiger, leopard, clouded leopard, leopard cat, golden cat, jungle cat and marbled cat.

1. Consider the following species along with the protected areas

- 1. Barasingha - Kanha NP
- 2. Gaur - Bandhavgarh NP
- 3. Gharial - Gandak Conservation Reserve

Which of the above species is/are correctly matched with the protected areas in which their conservation is a success?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. All of the above

**Answer: D**

**Explanation**



**Barasingha - Kanha NP**

- Once on the brink of extinction, the hard-ground swamp deer (barasingha) has seen a revival at this famous tiger reserve.
- **Rampant hunting, habitat loss and diseases** had taken a toll on their numbers, which reduced to 66 in 1967.

- The State animal of Madhya Pradesh - Hard Ground Barasingha is found exclusively in **Kanha Tiger Reserve**.
- It is the first tiger reserve in India to officially introduce a mascot, "**Bhoorsingh the Barasingha**".



### Gaur - Bandhavgarh NP

- Indian Bison
- The project of reintroduction of gaurs dealt with shifting some gaurs from **Kanha National Park to Bandhavgarh**.
- 50 animals were shifted by the winter of 2012.
- The reintroduced gaurs were monitored via **ground tracking and satellite GPS fixes**.



### Gharial - Gandak Conservation Reserve

- **Conservation efforts by the Bihar government** in the Gandak river have started showing results with 217 gharials being sighted in a recent survey, up from 30 in 2014, officials said on Sunda
- Gandak river became the **second successful breeding site for gharials in India after the Chambal sanctuary**.

### 2. Consider the following statement regarding World Restoration Flagships

1. The flagships are eligible to receive UN-backed promotion, advice or funding.
2. They were selected under the banner of the United Nations Decade on Ecosystem Restoration.
3. Two initiatives from India were part of it.

### Which of the above is/are correct?

- A. 1 only
- B. 1 and 2 only
- C. 1 and 3 only
- D. All of the above

**Answer: B**

### Explanation

### World Restoration Flagships

- Efforts from Central America to East Asia honoured as **World Restoration Flagships**
- Initiatives now eligible to receive **United Nations-backed promotion, advice or funding**

- They were selected under the banner of the **United Nations Decade on Ecosystem Restoration**, a global movement coordinated by the United Nations Environment Programme (UNEP) and the United Nations Food and Agriculture Organization (FAO).
- It is designed to **prevent and reverse the degradation** of natural spaces across the planet.
- **Namami Gange**, launched in 2014, is rejuvenating, protecting and conserving the Ganges and its tributaries, reforesting parts of the Ganges basin and promoting sustainable farming.
- It also aims to revive key wildlife species, including river dolphins, softshell turtles, otters, and the hilsa shad fish.



### 3. REWARD Scheme has been launched by

- World Bank
- Government of India
- State governments of Odisha and Karnataka
- All of the above

**Answer: D**

**Explanation**

**REWARD Scheme**

- REWARD stands for **Rejuvenating Watersheds for Agricultural Resilience through Innovative Development**.

- The **GoI, the State Governments of Karnataka and Odisha, and the World Bank** have signed a \$115 million for the REWARD Project.
- The project aims to help national and state institutions adopt improved watershed management practices to help increase farmers' resilience to climate change, promote higher productivity and better incomes.

### 4. Consider the following rivers and protected areas

- Valmiki TR - Gandak
- Corbett TR - Ramganga
- Mudumalai TR - Periyar
- Ranthambore TR - Banganga

**Which of the above protected areas are correctly matched with the rivers that flow through them?**

- Only 1 pair
- Only 2 pairs
- Only 3 pairs
- All of the above

**Answer: B**

### 5. Environment and Climate Sustainability Working Group (ECSWG) is associated with

- IPCC
- UNFCCC
- UNEP
- None of the above

**Answer: D**

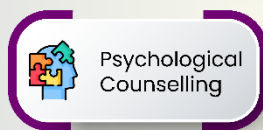
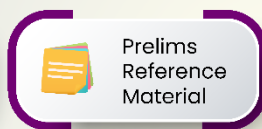
**Explanation**



## Environment and Climate Sustainability Working Group (ECSWG)

- The **First G20 Environment and Climate Sustainability Working Group (ECSWG)** meeting concluded showing interest and commitment to constructively work towards the objective of the **three priority areas** of
- Arresting Land Degradation, Accelerating Ecosystem Restoration and Enriching Biodiversity;
- Promoting a Sustainable and Climate Resilient Blue Economy and
- Encouraging Resource Efficiency and Circular Economy.

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Date - 27<sup>th</sup> May 2023

Questions from CDS & CAPF 2023

Q1)

16. The resolution adopted by the United Nations General Assembly on 3 March, 2021 decided to celebrate the year 2023 as the International Year of

- (a) Basic Sciences for Sustainable Development
- (b) Glass
- (c) Millets
- (d) Camelids

Answer: C

Q2)

Consider the following statements and identify the correct answer using the code given below :

1. In a thermal power station, fuels such as oil, coal or natural gas are used to generate electricity.
2. Fuels are burned to heat water and turn it into steam, which goes through a turbine, which spins and turns, generating electricity.

Code :

- (a) Statement 1 is correct but statement 2 is not correct
- (b) Statement 2 is correct but statement 1 is not correct
- (c) Both the statements are correct and statement 2 explains statement 1
- (d) Both the statements are correct but statement 2 does not explain statement 1

Answer: C

Q3)

37. Rani told her friends that last year she did boating in four different lakes, namely, Loktak, Barapani, Kolleru and Pulicat. Which of the following States did she visit?

- (a) Manipur, Meghalaya, Kerala, Tamil Nadu
- (b) Manipur, Meghalaya, Andhra Pradesh, Tamil Nadu
- (c) Mizoram, Assam, Kerala, Tamil Nadu
- (d) Mizoram, Assam, Andhra Pradesh, Tamil Nadu

Answer: B

Q4)

44. Who among the following is honoured with the UN Environment Programme's 2022 Champions of the Earth Award in the Entrepreneurial Vision category?

- (a) Ela Bhatt
- (b) Amit Dasgupta
- (c) Purnima Devi Barman
- (d) Vanshika Parmar

Answer: C

Q5)

77. Cheetahs, brought from Namibia, were introduced in India to which one of the following National Parks?

- (a) Kaziranga National Park
- (b) Keoladeo Ghana National Park
- (c) Keibul Lamjao National Park
- (d) Kuno National Park

Answer: D

**Q6)**

**107.** There is an increase in forest cover area of India between 2011 and 2021. However, there is a decrease in forest cover area of India during the same period in

- (a) very dense forest (canopy density of more than 70 percent)
- (b) moderately dense forest (canopy density between 40–70 percent)
- (c) open forest (canopy density between 10–20 percent)
- (d) Both (b) and (c)

**Answer: D**

**Q7)**

**62.** Which one of the following is the venue of the UN 2023 Water Conference?

- (a) Washington, DC
- (b) New York
- (c) San Diego
- (d) New Delhi

**Answer: B**

CONFERENCE

## UN 2023 Water Conference

22 - 24 March 2023  
New York, United States of America

**Q8)**

**119.** Match List-I with List-II and select the correct answer using the code given below the Lists :

List-I (Day)	List-II (Date)
A. World Wetlands Day	1. 29 July
B. International Tiger Day	2. 22 April
C. World Water Day	3. 2 February
D. International Mother Earth Day	4. 22 March

Code :

(a) A B C D  
3 4 1 2

(b) A B C D  
3 1 4 2

(c) A B C D  
2 1 4 3

~~(d) A B C D~~  
2 4 1 3

**Answer: B**

**Q9)**

**2.** Which one of the following has the adaptation 'echolocation' to detect the prey?

- (a) Rattlesnake
- (b) Barn owl
- (c) Grasshopper
- (d) Bat

**Answer: D**

Q10)

3. Which one of the following is the most important stage in the process of ecological succession?

- (a) Claim
- (b) Acceptance by community members
- (c) Reaction
- (d) Settlement

Answer: C

- (1). Nudation
- (2). Invasion
- (3). Competition and Co-action
- (4). Reaction
- (5). Stabilization (climax)



Q11)

4. In which one of the following trophic structures of ecosystems, both fungi and bacteria occur?

- (a) Decomposer
- (b) Autotroph
- (c) Heterotroph
- (d) Food web

Answer: A

Q12)

6. Which one of the following managed ecosystems has the highest amount of standing crop?

- (a) Agricultural land
- (b) Grazing land
- (c) Human habitation
- (d) Forest plantation

Answer: D

Q13)

30. Which one of the following animals lays eggs to reproduce?

- (a) Dolphin
- (b) Seal
- (c) Platypus
- (d) Whale

Answer: C

Q14)

32. In deep ponds and lakes, which one of the following vertical zones receives least light penetration?

- (a) Surface
- (b) Littoral zone
- (c) Limnetic zone
- (d) Profundal zone

Answer: D



Q15)

33. What is ecological amplitude?

- (a) The range of demands and consequent range of tolerance of a species to the fluctuations in environmental conditions
- (b) The range of tolerance of a species in constant environmental conditions
- (c) The range of demands of a species in constant environmental conditions
- (d) The range of ecological conditions found in a biome

Answer: A

---

Q16)

34. Which one of the following organisms can live both in air (outside water) and in water?

- (a) Xerocole
- (b) Mesocole
- (c) Secondary hydrocole
- (d) Mesophyte

Answer: B

---

Q17)

35. What is 'duff'?

- (a) Partially decomposed litter
- (b) Weathered rock
- (c) Muddy puddle
- (d) Carcass of a dead animal

Answer: A

---

Q18)

37. What is 'pyrophilous organism'?

- (a) Fresh grass growing after ground fire
- (b) Fungi growing in soils of burnt terrains
- (c) Seeds germinating after clear felling of forest
- (d) Organisms with capacity to regenerate the tail after it was lost due to damage

Answer: B

---

Q19)

41. Which one of the following is a lagoon?

- (a) Pulicat
- (b) Deepor Beel
- (c) Kolleru
- (d) Gohna

Answer: A

Q20)

42. Which one of the following is **not** observed by the stations operated by the Central Water Commission?
- (a) Water level
  - (b) Silt
  - (c) Water conservation
  - (d) Water discharge

Answer: C

---

Q21)

48. Which one of the following ecological adaptations is **not** 'dormancy'?
- (a) Hibernation
  - (b) Aestivation
  - (c) Diapause
  - (d) Cyclomorphosis

Answer: D

---

Q22)

49. What are 'circadian rhythms'?
- (a) Daily responses of animals to light conditions
  - (b) Growth of plant tip with changing light direction
  - (c) Annual responses of living organisms to light conditions
  - (d) Daily responses of animals to water availability

Answer: A

---

Q23)

50. What is 'bioenergetic approach' in modern ecology?
- (a) Study of similarities and differences in food relationships among living organisms and various forms of energy supporting their life
  - (b) Study of energy retention by ecosystems under threat
  - (c) Study of energy loss by ecosystems under threat
  - (d) Study of energy in deep oceans during cyclone buildup

Answer: A

---

Q24)

51. Which one of the following is defined as a natural biological unit tied together by the sharing of a common gene pool?
- (a) Vegetation
  - (b) Flora
  - (c) Fauna
  - (d) Species

Answer: D

---



Q25)

52. Which one of the following is **not** a non-renewable energy source?

- (a) Coal
- (b) Oil
- (c) Sunlight
- (d) Nuclear fuel

Answer: C

Q26)

82. Which one of the following is the international convention agreement specifying the commitments of different countries to mitigate climate change?

- (a) Montreal Protocol
- (b) Kyoto Protocol
- (c) Paris Agreement
- (d) Bali Agreement

Answer: C

Q27)

83. Which one of the following is a known metallophyte for Fe?

- (a) *Eichhornia crassipes*
- (b) *Miconia lutescens*
- (c) *Astragalus acemosus*
- (d) *Mentha arvensis*

Answer: A

Q28)

85. Duckweed or Azolla is used as a/an

- (a) pesticide
- (b) biofertilizer
- (c) arsenic indicator
- (d) antiseptic

Answer: B

Q29)

86. Which one of the following 'algae' is **not** known identified partner to form lichen?

- (a) *Nostoc*
- (b) *Stigonema*
- (c) *Trentepohlia*
- (d) *Vaucheria*

Answer: D

Q30)

111. According to the Climate Change Performance Index (CCPI), 2023, India climbed two spots to rank

- (a) seventh
- (b) eighth
- (c) ninth
- (d) tenth

Answer: B



Q31)

112. Freddie, Elton, Oban, Siyaya, Aasha, Tbilisi, Sasha and Savannah are names of

- (a) nuclear reactors of Ukraine
- (b) cheetahs brought to India from Namibia
- (c) National Parks of Tanzania
- (d) tropical and sub-tropical grasslands

Answer: B

Q32)

114. Thundi Beach and Kadmat Beach, which recently entered the coveted list of Blue Beaches, an eco-label given to the cleanest beaches in the world, are located in

- (a) Puducherry
- (b) Lakshadweep
- (c) Kerala
- (d) Andaman and Nicobar Islands

Answer: B

Q33)

116. According to the United Nations Environment Programme (UNEP), one of the recent large-scale accidental releases of methane gas into the ocean occurred in

- (a) Exxon Valdez
- (b) Nord Stream
- (c) Deepwater Horizon
- (d) Atlantic Empress

Answer: B

Q34)

108. According to the Solid Waste Management Rules, 2016, the responsibility of waste generators has been fixed for segregation of waste in which of the following streams?

- (a) Biodegradable and non-biodegradable wastes
- (b) Metallic and non-metallic wastes
- (c) Wet, dry and domestic hazardous wastes
- (d) Recyclable and non-recyclable wastes

Answer: C

Q35)

118. Who among the following is credited with pioneering the oral rehydration therapy?

- (a) Anandi Joshi
- (b) Bidhan Chandra Roy
- (c) Dilip Mahalanabis
- (d) Siddhartha Mukherjee

Answer: C

Q36)

119. According to scientists, which one of the following is the only known animal, except for humans, capable of telling the difference between odd and even numbers?

- (a) Butterfly
- (b) Honeybee
- (c) Dragonfly
- (d) Cricket

Answer: B

Q37)

7. The boundary layer of the forest at which the energy exchange occurs and some insolation is returned directly to space is

- (a) forest floor
- (b) forest soil
- (c) forest canopy
- (d) forest litter

Answer:

Q38)

8. The organisms that prefer high salt concentration habitats refer to as

- (a) alkaliphiles
- (b) calcifuges
- (c) halophiles
- (d) nitrophiles

Answer: C

Q39)

12. Which of the following combinations correctly represents the genetic materials in prokaryotes and eukaryotes respectively?

- (a) Nucleoid and Chromatin
- (b) Chromatin and Nucleoid
- (c) Nucleoid and Nucleolus
- (d) Nucleolus and Chromatin

Answer: A

Q40)

15. Which one of the following animals has a four-chambered heart?

- (a) King cobra
- (b) Turtle
- (c) Chameleon
- (d) Crocodile

Answer: D

Q41)

96. The principle of 'common but differentiated responsibilities and respective capabilities', often talked about in media, refers to

- (a) WHO's COVID-19 Global Vaccination Drive
- (b) contributions to the International Monetary Fund
- (c) reduction of greenhouse gas emissions
- (d) contributions to the United Nations Peacekeeping Operations

Answer: B



**Date – 01<sup>st</sup> June 2023**

**1. Which of the following processes occur during photosynthesis?**

1. Absorption of light energy by chlorophyll.
2. Conversion of light energy to chemical energy.
3. Splitting of water molecules into hydrogen and oxygen.
4. Reduction of carbon dioxide to carbohydrates.

**Choose the correct option**

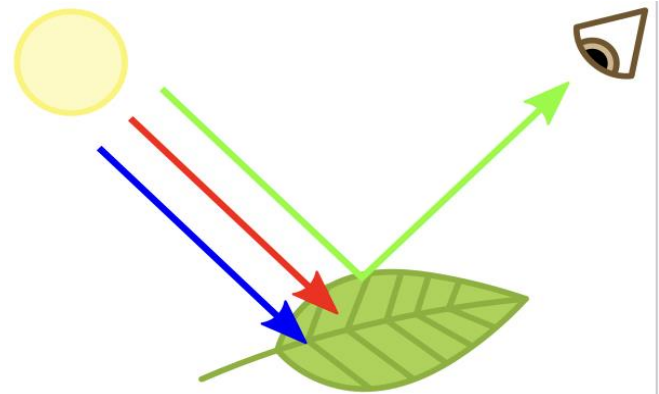
- A. 2, 3 and 4 only
- B. 1, 2 and 3 only
- C. 1 and 3 only
- D. 1, 2, 3 and 4

**Answer : D**

**Explanation**

**Let us now see what actually happens during the process of photosynthesis.**

- Absorption of light energy by chlorophyll.
- Conversion of light energy to chemical energy and splitting of water molecules into hydrogen and oxygen.
- Reduction of carbon dioxide to carbohydrates.



Plants are perceived as green because chlorophyll absorbs mainly the blue and red wavelengths but green light, reflected by plant structures like cell walls, is less absorbed.<sup>[1]</sup>



**2. Consider the following statements with respect to Adaptations:**

1. A special photosynthetic pathway (CAM) is a feature of many desert plants.
2. At high altitudes, the human body compensates for low oxygen availability by increasing red blood cell production, increasing the binding capacity of haemoglobin and by increasing breathing rate.

**Which of the above is correct?**

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**Answer: A**

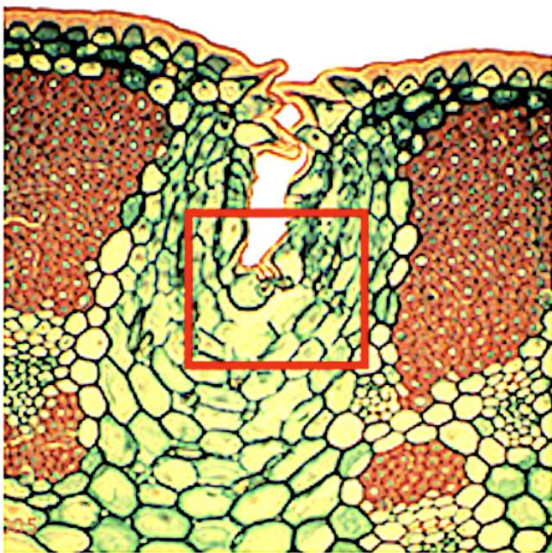
**Explanation**



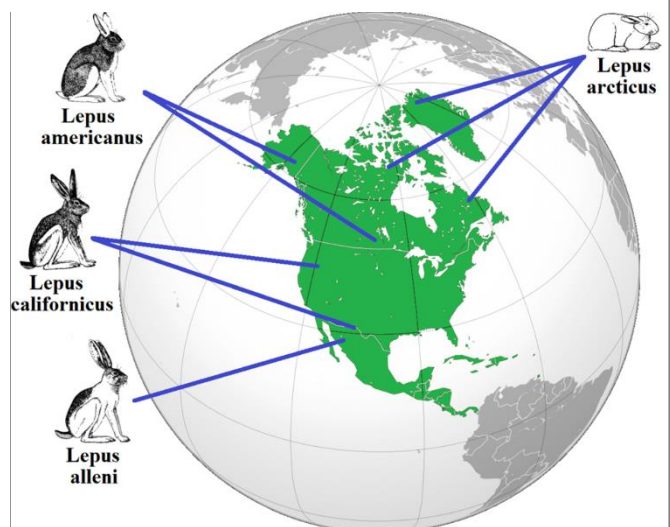
- Many desert plants have a thick cuticle on their leaf surfaces and have their stomata arranged in deep pits to minimise water loss through transpiration.
- They also have a special photosynthetic pathway (CAM) that enables their stomata to remain closed during day time.
- Some desert plants like Opuntia, have no leaves – they are reduced to spines – and the photosynthetic function is taken over by the flattened stems.



- Mammals from colder climates generally have shorter ears and limbs to minimize heat loss. (This is called the Allen's Rule.)
- In the polar seas aquatic mammals like seals have a thick layer of fat (blubber) below their skin that acts as an insulator and reduces loss of body heat.
- The body compensates low oxygen availability by increasing red blood cell production, decreasing the binding capacity of haemoglobin and by increasing breathing rate.



**Figure 9.2.1b – Micrograph of xerophytic adaptation – stomata in pit**





**3. Consider the following statements:**

1. Of the incident solar radiation more than 50 per cent of it is photo synthetically active radiation (PAR).
2. Plants capture only 2-10 per cent of the PAR and this small amount of energy sustains the entire living world.

**Which of the above is correct?**

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**Answer: B**

**Explanation**

- Except for the deep sea hydro-thermal ecosystem, sun is the only source of energy for all ecosystems on Earth.
- Of the incident solar radiation less than 50 per cent of it is photosynthetically active radiation (PAR).
- We know that plants and photosynthetic and chemosynthetic bacteria (autotrophs), fix suns' radiant energy to make food from simple inorganic materials.

- Plants capture only 2-10 per cent of the PAR and this small amount of energy sustains the entire living world.
- So, it is very important to know how the solar energy captured by plants flows through different organisms of an ecosystem.
- All organisms are dependent on their food on producers, either directly or indirectly.

**4. With reference to ecology, which among the following correctly describes the Allen's rule?**

- A. It states that mammals from colder climates generally have shorter ears and limbs to minimize heat loss.
- B. It states that the growth and productivity of a plant is always limited by availability of a critical nutrient.
- C. It states that if two species have completely overlapping niches they cannot continue to coexist.
- D. None of the above.

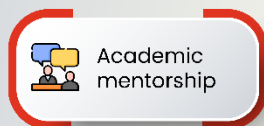
**Answer: A**

**Explanation**

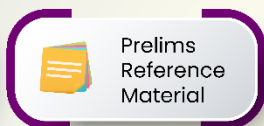
- Allen's rule states that mammals from colder climates generally have shorter ears and limbs to minimise heat loss.
- In cold climates need to conserve as much heat as possible, Allen's rule predicts that they should have evolved comparatively low surface area-to-volume ratios to minimize the surface area by which they dissipate heat, allowing them to retain more heat.

- For animals living in warm climates, Allen's rule predicts the opposite: that they should have comparatively high ratios of surface area to volume.
  - *Bergmann rule states that birds and mammals in cold regions have been observed to be bulkier than individuals of the same species in warm regions.*
  - Liebig's law of the minimum states that the rate of growth of a plant, the size to which it grows, and its overall health depend on the amount of the scarcest of its essential nutrients that is available to it.
  - Competitive exclusion principle, sometimes referred to as Gause's law of competitive exclusion, is a proposition that states that two species competing for the same resource cannot coexist at constant population values, if other ecological factors remain constant.
- When two competing life forms attempt to occupy the same niche, only one outcome is possible: One life form will drive out the other.

## GENERAL STUDIES MENTORSHIP ONLY COURSE FOR UPSC CSE PRELIMS 2024



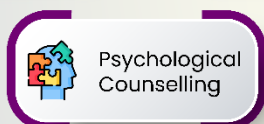
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**5. Consider the following statements with respect to response to abiotic factor:**

1. Aestivation is a response by certain organisms to escape the unfavourable conditions during summer.
2. Diapause, a stage of suspended development is a response by many zooplankton species during unfavorable conditions in lakes and ponds.

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

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**Answer : C**

**Explanation**

- In animals, the organism, if unable to migrate, might avoid the stress by escaping in time.
- The familiar case of bears going into hibernation during winter is an example of escape in time.
- Some snails and fish go into aestivation to avoid summer-related problems-heat and desiccation. (aestivation)
- Under unfavorable conditions, many zooplankton species in lakes and ponds are known to enter diapause, a stage of suspended development.

**Date – 15<sup>th</sup> June 2023**

**1. Consider the following statements regarding CO<sub>2</sub> levels in the atmosphere**

1. CO<sub>2</sub> levels have spiked more than 50 per cent than at the commencement of the industrial age.
2. The monthly average crossed the 400 ppm mark for the first time in May 2013.
3. The rate of growth of CO<sub>2</sub> has increased to nearly 2.5 ppm per year after 2010.

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

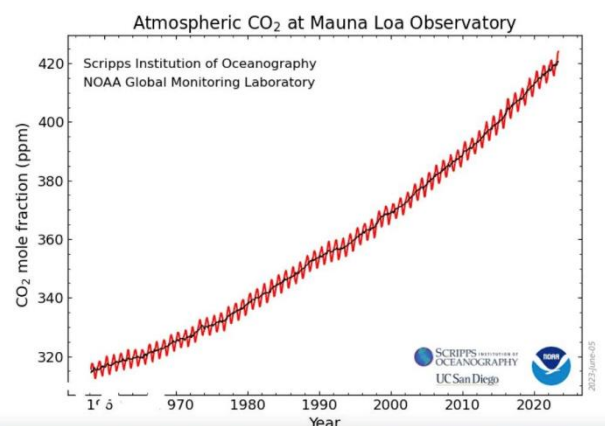
- A. Only one
- B. Only two
- C. All three
- D. None

**Answer: C**

**Explanation**

**CO<sub>2</sub> Levels**

- Atmospheric concentrations of carbon dioxide have recorded a new high, with the monthly average in May 2023 touching 424 parts per million.
- The current concentrations are now more than 50 per cent higher than the pre-industrial times.



- The monthly average crossed the 400 ppm mark for the first time in May 2013.
- Data shows that the concentrations were growing at less than 1 ppm per year in the decade between 1960 and 1970, but this rate of growth has increased to nearly 2.5 ppm per year after 2010.
- This year it has grown by 3 ppm.
- On-site CO<sub>2</sub> observation at the Mauna Loa weather station was started by Charles David Keeling, a geoscientist at Scripps Oceanography 1958.

---

**2. Which of the following statements clearly defines Bluewashing?**

- A. Deceptive form of marketing in which an enterprise uses deceptive marketing techniques to overstate its commitment to responsible social practices.
- B. Process of ocean protection under the aegis of the UN Decade of Ocean Science for Sustainable Development (2021-2030)
- C. When marketing is deceptively used to persuade the public that an organisation's products, aims and policies are environmentally friendly.
- D. None of the above.

**Answer: A**

**Explanation**

**Bluewashing**

- Bluewashing refers to a deceptive form of marketing in which an enterprise uses deceptive marketing techniques to overstate its commitment to responsible social practices.
- It can be used interchangeably with the term greenwashing but has a greater focus on economic and community factors rather than the environment.

---

**3. Consider the following statements regarding the Himalayan Brown Bear**

1. In India, they are found in Uttarakhand, Himachal Pradesh and Jammu and Kashmir.
2. They inhabit altitudes ranging from 2,000 to 2,500 metres, predominantly above the tree line.
3. They are diurnal, and their sense of smell is acutely developed and believed to be their principal means of finding food.

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

- A. Only one
- B. Only two
- C. All three
- D. None

**Answer: A**

**Explanation**

**Himalayan Brown/Red Bear**

- It is a subspecies of the brown bear.
- It is the largest mammal in the region.

- The bears are omnivorous and hibernate in dens during the winter.
- Its presence is in northern Afghanistan, Nepal, Tibet, north India, and north Pakistan.
- The animal, said to be 200 in number, is also found in Himachal Pradesh and Uttarakhand though it is fairly common in the Kashmir and Kargil valleys.
- They are nocturnal, and their sense of smell is acutely developed and believed to be their principal means of finding food.



A Himalayan brown bear (*Ursus arctos isabellinus*). Photo credit: Usman Ghani.

- CITES - Appendix I
- Indian Wildlife (Protection) Act of 1972 - Schedule I
- While the brown bear as a species is classified as Least Concern by the IUCN, this subspecies is highly endangered and populations are dwindling.
- IUCN Status - Critically Endangered

#### 4. ICT-Poly Urja is related to which of the following?

- Process of conversion of biomass into fuels
- Process of conversion of plastics into fuels
- A form of pyrolysis to convert waste to energy
- None of the above.

**Answer: B**

#### Explanation

#### ICT-Poly Urja

- Professor Aniruddha B Pandit, from Institute of Chemical Technology (ICT) Mumbai developed a process called ICT-Poly Urja which uses indigenously prepared patented  $\text{Cu@TiO}_2$  catalyst for CTL (Catalytic Thermo Liquefaction) of several types of poly-olefinic plastic waste into HC-Oil 300 C in 30 min.
- The process leads to more than 85% feedstock conversion, and high-quality C and H elements enriched HC-Oil with a calorific value of 42 MJ/kg.
- The fuel can be burned to generate steam and power.
- Supported by DST.

#### 5. Consider the following statements regarding Accelerating to Zero (A2Z) Coalition

- It is about promoting zero-emission transportation



2. It builds off the momentous foundation of the “Zero Emission Vehicles Declaration” (ZEV Declaration) generated at COP26.

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

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**Answer: D**

**Explanation**

**Accelerating to Zero (A2Z) Coalition**

- Accelerating to Zero (A2Z) Coalition is the next step in securing more ambitious commitments to a zero-emission vehicle transition aligned with the Paris Agreement.

- The A2Z Coalition connects the world’s leading organizations on zero-emission transportation, creating a platform to support in understanding, developing, and implementing ambitious zero-emission transportation policies and plans, and showcase leadership.
- With transportation accounting for approximately 20% of global greenhouse gas emissions, shifting the sector is crucial to meet the goals set by the Paris Agreement.

The coalition is a partnership of the UK government’s COP26 Presidency, The Climate Change High-Level Champions, the International Council on Clean Transportation, the Climate Group, and the Drive Electric Campaign - all working towards sales of new cars and vans being zero emission no later than 2035 in leading markets and 2040 globally.



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**Date – 29<sup>th</sup> June 2023**

**1. Consider the following statements regarding Energy Transition Index 2023**

1. India is the only major economy with energy transition momentum accelerating across all dimensions.
2. India is the only G20 country in the top 10.
3. It is released by WEF.

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

- A. Only one
- B. Only two
- C. All three
- D. None

**Answer: B**

**Explanation**

**Energy Transition Index 2023**

- Released by World Economic Forum
- India is in 67<sup>th</sup> place globally.
- It is the only major economy with energy transition momentum accelerating across all dimensions.
- Sweden topped the list and was followed by Denmark, Norway, Finland and Switzerland in the top five on the list of 120 countries.
- Besides India, Singapore is the only other major economy showing "true momentum by advancing sustainability, energy security and equity in a balanced way," the WEF said.

- France (7) was the only G20 country in the top 10, followed closely by Germany (11), the U.S. (12), and the U.K. (13).

**2. Consider the following statements regarding the Sealion**

1. They belong to the category of fish.
2. They are considered sentinel species.
3. They are not found in India.

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

- A. Only one
- B. Only two
- C. All three
- D. None

**Answer: A**

**Explanation**

**Sea lions**



- Sea lions are related to walrus and seals.
- The sea lion is the most common mammal in the Galápagos.
- They are found primarily in the Pacific waters.

- Marine biologists consider sea lions a sentinel species - animals that can help identify environmental risks to humans.

### 3. Consider the following

1. Carbon dioxide from urea
2. Nitrous oxide from livestock dung and urine
3. Methane from belching

Which of the above sources of livestock emissions is/are correctly matched?

- A. Only one
- B. Only two
- C. All three
- D. None

Answer: C

#### Explanation

##### Emissions from Livestock

- Emissions from livestock mainly include carbon dioxide (from urea), nitrous oxide (from livestock dung and urine), and methane (from belching) among others.
- In the livestock sector, popular belief says cow flatulence is a bigger source of methane than cow belching.
- They contribute towards the greenhouse effect as due to these gases, heat gets trapped around the surface of the earth and causes global warming.

4. 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

#### Explanation

##### Gucchi



- Found on the foothills of the Himalayas.
- One of the most sought-after edible mushrooms, gucchi is known for its spongy, honeycombed head and savoury flavour but all of that comes at a high price.
- It is known to be one of the most expensive mushrooms.



- The mushrooms cannot be cultivated commercially and grow in conifer forests across temperature regions, and the foothills in Himachal Pradesh, Uttarakhand, and Jammu and Kashmir.
- And it takes months for villagers to collect enough of these mushrooms, dry them and bring them to the market.

**5. Consider the following statements regarding Ecological Equivalents**

1. Organisms occupying similar ecological niches but living in different regions.
2. They include the same species living in different niches.

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

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

**Answer: C**

**Explanation**

**Ecological Equivalents**

- Organisms occupying **similar ecological niches but living in different regions** are called ecological equivalents.
- Certain species of epiphytic orchids of Western Ghats of India differ from the epiphytic orchids of South America. But they are epiphytes.
- Wooded areas - Owls feed on mice, in human habitations - Cats feed on mice

- Species of the grass lands of Western Ghats of India differ from the grass species of temperate grass lands of Steppe in North America.
- But they are all ecologically primary producers and fulfilling similar roles in their respective communities.
- They also include the **same species living in different niches.**

**Example** - Fox is a carnivore but in case of winter shortage, is forced to feed on dried berries and grapes.

**Date - 30<sup>th</sup> June 2023**

**6 MCQs from CAPF 2021**

**84. Which of the following statements about tropical rain forests are correct?**

1. The soils of tropical rain forests are quite infertile.
2. The vegetation is evergreen, enabling photosynthesis to take place year around.
3. They have been described as 'deserts covered by trees'.
4. They are most productive land-based ecosystem.

Select the correct answer using the code given below.

(a) 2 and 4 only

(b) 1, 3 and 4 only

(c) 1, 2 and 3 only

(d) 1, 2, 3 and 4

**Answer - D**

**104.** Which of the following factors are needed for the growth of corals?

1. Freshwater
2. Clear shallow salt water
3. Plenty of sunlight for photosynthesis
4. Warm water between 23 °C and 25 °C

Select the correct answer using the code given below.

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

**Answer - B**

**112.** E-100 pilot project, launched in Pune in June 2021, is related to the production and distribution of

- (a) COVID vaccine
- (b) ethanol
- (c) electric vehicle
- (d) ethane

**Answer - B**

**64.** Where is Asan Conservation Reserve located?

- (a) Himachal Pradesh
- (b) Uttarakhand
- (c) Sikkim
- (d) Arunachal Pradesh

**Answer - B**

**101.** Which one of the following is the only riverine major port in India?

- (a) Mormugao
- (b) Deendayal
- (c) Kolkata
- (d) Paradip

**Answer - C**

**22.** Which one among the following is **not** a renewable energy source?

- (a) Solar
- (b) Wind
- (c) Nuclear
- (d) Hydroelectric

**Answer - C**

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**Date - 14<sup>th</sup> July 2023**

## 1. Consider the following statements about Military emissions

1. They account for approx. 5.5% of global greenhouse gas emissions.
2. They have been left out of the 1997 Kyoto Protocol.
3. They have been included in the 2015 Paris Agreement.

How many of the above statements are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

**Answer: B**

**Explanation**

**Military Emissions**

- Among the world's biggest consumers of fuel, militaries account for 5.5% of global greenhouse gas emissions, according to a 2022 estimate by international experts.
- But defence forces are not bound by international climate agreements to report or cut their carbon emissions, and the data that is published by some militaries is unreliable or incomplete at best, scientists and academics say.
- That's because military emissions abroad, from flying jets to sailing ships to training exercises, were left out of the 1997 Kyoto Protocol on reducing greenhouse gases - and exempted again from the 2015 Paris Accords - on the grounds that data about energy use by armies could undermine national security.

## 2. Consider the following statements regarding *Madhuca indica* (Mahua)

1. It is a prominent tree in tropical mixed



deciduous forests.

- The leaves of *Madhuca indica* are fed on by the moth *Antheraea paphia*, which produces tassar silk.
- Its fruit is edible and is also fermented to produce the alcoholic drink Mahua, a country liquor.

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

- Only one
- Only two
- All three
- None

**Answer: B**

**Explanation**

**Mahua (*Madhuca Indica*)**

- It is an Indian tropical tree found largely in the central, southern, north Indian plains and forests, Nepal, Myanmar and Sri Lanka.
- ahua (*Madhuca indica*) flowers in the country. It is one of the top minor forest produce.
- Many socio-economic activities are dependent on this flower in our remote areas.

**Mahua**

- The mahua flower is edible and is a food item for tribals.
- They use it to make syrup for medicinal purposes.
- Mahua flowers are rich in total sugars, out of which reducing sugar are present in high amount.

- The flowers are also fermented to produce the alcoholic drink mahua, a country liquor.
- Mahua flowers are also used to manufacture jam.
- Mahua fruit are an essential food of Western Odisha people.
- The tree has a great cultural significance.
- The leaves of *Madhuca indica* are fed on by the moth *Antheraea paphia*, which produces tassar silk, a form of wild silk of commercial importance in India.
- Leaves, flowers and fruits are also lopped to feed goats and sheep.

---

**3. As part of its multi-pronged efforts to clean and rejuvenate the Ganges River, hundreds of turtles will be released into the river in Varanasi. Which of the following effects would be seen?**

- Decrease in biochemical demand (BOD)
- Decrease in faecal coliform (FC)
- Decrease in dissolved oxygen (DO)

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

- Only one
- Only two
- All three
- None

**Answer: A**

**Explanation**

**Turtles and River Ganga**

- Under a joint aegis of the Namami Gange Programme, the Forest and Wildlife Department, and the Wildlife Institute of India (WII), turtles hatched at one of India's first breeding and rehabilitation centres for

turtles situated in Varanasi, will improve the cleanliness of the Ganga.

- The river is polluted by the disposal of half-burnt dead bodies, rotten meat and garlands of flowers that are thrown into it.
- Roughly a dozen species, both herbivores and carnivores, are nurtured.
- The Forest and Wildlife Department's team brings turtle eggs from the coastal areas of the Chambal region.
- The quality of water in the Ganga has improved, and definitely turtles have a role as they feed on meat and waste products thrown in the river.
- Improvement in biochemical demand (BOD), faecal coliform (FC) and dissolved oxygen (DO) was found in river water quality checks.

**4. Consider the following statements regarding Cheetah:**

1. Cheetah prefer dense to moderate forests ecosystems
2. The African subspecies of Cheetah is critically endangered as per the IUCN Red List
3. The largest population of the Asiatic Cheetah is found in Iran

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

- A. Only one
- B. Only two
- C. All three
- D. None

**Answer: A**




**Explanation**



- Cheetahs belong to the cat family and are native to Africa and Asia.
- It is the fastest land animal estimated to be capable of running at 80 to 128 km/h
- There are two major Cheetah subspecies - African and the Asian Cheetah.
- The Asiatic cheetah is slightly smaller and slender than the African Cheetah.
- The Asian Cheetah having which is critically endangered with 100 individuals left, are currently found in Iran
- The African cheetah is found across Africa. It has a population of about 10,000 individuals.
- Cheetahs live in open plains; their habitat is predominantly where their prey lives - grasslands, scrubs and open forest systems, semi-arid environments and temperatures that tend to be hotter compared to cooler regimes.

**CHEETAH FACTS:**

- Oldest of the big cat species
- Ancestors can be traced back about **8.5 million years**
- Number of cheetahs just **under 7,500** individuals globally



- IUCN's Red List recognises cheetahs as "**vulnerable**" species
- The Asiatic cheetah and the Northwest African cheetah are **critically endangered**
- Cheetahs have **lost 90%** of their global habitat
- They now live in **9%** of its historic range

4. Articles made of it can be easily disposed of by incineration without causing greenhouse gas emissions.

Which of the statements given above are correct?

- A. 1 and 3
- B. 2 and 4
- C. 1 and 4
- D. 2 and 3

Answer: A

5. With reference to polyethylene terephthalate the use of which is so widespread in our daily lives, consider the following statements:

- 1. Its fibres can be blended with wool and cotton fibres to reinforce their properties
- 2. Containers made of it can be used to store any alcoholic beverage.
- 3. Bottles made of it can be recycled into other products.

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