

ForumIAS

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Prelims Marathon

April, 2024

*HISTORY
ECONOMICS
POLITY
SCIENCE AND TECHNOLOGY
GEOGRAPHY AND ENVIRONMENT*

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Environment & Ecology

Q.1) Which of the following “deals with the ways in which organisms are moulded by their environment, how they make use of environmental resources including energy flow and mineral cycling”?

- a) Biostatics
- b) Ecology
- c) Carrying capacity
- d) Possibilism

ANS: B

Explanation: Ecology is defined “as a scientific study of the relationship of the living organisms with each other and with their environment.”

It deals with the ways in which organisms are moulded by their environment, how they make use of environmental resources including energy flow and mineral cycling.

Source: Shankar IAS

Q.2) Which of the following ancient text/s has reference to ecology?

- 1. The Samhitas
- 2. The Aranyakas
- 3. The Brahmanas

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Our ancient Indian texts have references to ecological principles.

- The classical texts of the Vedic period such as the Vedas, the Samhitas, the Brahmanas and the Aranyakas-Upanishads contain many references to ecological concepts.
- The Indian treatise on medicine, the Charaka-Samhita and the surgical text Sushruta-Samhita, show that people during this period had a good understanding of plant and animal ecology.

Source: Shankar IAS

Q.3) Which of the following is/are biotic component/s of environment?

- 1. Non – green plants
- 2. Symbionts
- 3. Decomposers

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The relationship and interaction between organism and environment are highly complex.

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- It comprises both living (biotic) and non-living (abiotic) components. The environment is not static.
- Both biotic and abiotic factors are in a flux and keeps changing continuously

Components of Environment	
Abiotic	Biotic
Energy	Green plants
Radiation	Non-green plants
Temperature & heat flow	Decomposers
Water	Parasites
Atmospheric gases and wind	Symbionts
Fire	Animals
Gravity	Man
Topography	
Soil	
Geologic substratum	

Source: Shankar IAS

Q.4) Consider the following statements:

1. In terrestrial ecosystem, producers are basically herbaceous and woody plants.
2. In aquatic ecosystem producers are various species of microscopic algae.

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

ANS: C

Explanation: Primary producers are basically green plants (and certain bacteria and algae).

- They synthesize carbohydrate from simple inorganic raw materials like carbon dioxide and water in the presence of sunlight by the process of photosynthesis for themselves, and supply indirectly to other nonproducers.
- In terrestrial ecosystem, producers are basically herbaceous and woody plants, while in aquatic ecosystem producers are various species of microscopic algae.

Source: Shankar IAS

Q.5) Which of the following is/are consumer/s?

1. Cow
2. Rabbit
3. Wolves

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Consumers are incapable of producing their own food (photosynthesis). Consumers can be divided into two broad groups namely micro and macro consumers.

- They feed on plants or animals or both and are categorized on the basis of their food sources.

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- Herbivores are primary consumers which feed mainly on plants e.g. cow, rabbit. Secondary consumers feed on primary consumers e.g. wolves.

Source: Shankar IAS

Q.6) The term “Saprotrophs” is associated with which of the following?

- a) Producers
- b) Decomposers
- c) Consumers
- d) Secondary consumers

ANS: B

Explanation: Saprotrophs (decomposers or osmotrophs): They are bacteria and fungi which obtain energy and nutrients by decomposing dead organic substances (detritus) of plant and animal origin.

- The products of decomposition such as inorganic nutrients which are released in the ecosystem are reused by producers and thus recycled.
- Earthworm and certain soil organisms (such as nematodes, and arthropods) are detritus feeders and help in the decomposition of organic matter and are called detritivores.

Source: Shankar IAS

Q.7) “Ecosystems are capable of maintaining their state of equilibrium and regulate their own species structure and functional processes” – related to?

- a) Carrying capacity
- b) Homeostasis
- c) Environmental determinism
- d) Possibilism

ANS: B

Explanation: Ecosystems are capable of maintaining their state of equilibrium. They can regulate their own species structure and functional processes. This capacity of ecosystem of self regulation is known as homeostasis.

Source: Shankar IAS

Q.8) Which of the following is/are example/s of ecotone zones?

1. Mangroves
2. Grasslands
3. River bank

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Ecotone is a zone of junction between two or more diverse ecosystems. For e.g. the mangrove forests represent an ecotone between marine and terrestrial ecosystem. Other examples are – grassland, estuary and river bank.

Source: Shankar IAS

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Q.9) "It is the unique functional role or place of a species in an ecosystem" denotes?

- a) Ecotone
- b) Niche
- c) Homeostasis
- d) Ecology

ANS: B

Explanation: A niche is the unique functional role or place of a species in an ecosystem. It is a description of all the biological, physical and chemical factors that a species needs to survive, stay healthy and reproduce.

Source: Shankar IAS

Q.10) Which of the following fauna is/are commonly found in tundra region?

- 1. Lemming
- 2. Reindeer
- 3. Ptarmigan

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The typical animals found in tundra region are reindeer, arctic fox, polar bear, snowy owl, lemming, arctic hare, and ptarmigan. Reptiles and amphibians are almost absent.

Source: Shankar IAS

Environment & Ecology - II

Q.1) Consider the following statements regarding "Tropical rain forest biome":

- 1. It covers about 7% of the earth's surface and 40% of the world's plant and animal species.
- 2. Most animals and epiphytic plants are concentrated in the canopy or tree top zones.

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

ANS: C

Explanation: Tropical rain forest covers about 7% of the earth's surface & 40% of the world's plant and animal species.

- Multiple storeys of broad-leafed evergreen tree species are in abundance.
- Most animals and epiphytic plants are concentrated in the canopy or tree top zones.

Source: Shankar IAS

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Q.2) Which of the following is/are cover/s under Lotic water system?

1. Creeks
2. Ponds
3. Bogs

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: A

Explanation: Fresh water ecosystems are classified as lotic (moving water) or lentic (still or stagnant water).

- Lotic water system includes freshwater streams, springs, rivulets, creeks, brooks, and rivers.
- Lentic water bodies include pools, ponds, some swamps, bogs and lakes.

Source: Shankar IAS

Q.3) Which of the following is/are form/s estuaries?

1. Coastal bays
2. River mouths
3. Tidal marshes

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Coastal bays, river mouths and tidal marshes form the estuaries.

- In estuaries, fresh water from rivers meet ocean water and the two are mixed by action of tides.
- Estuaries are highly productive as compared to the adjacent river or sea.

Source: Shankar IAS

Q.4) Consider the following statements regarding “Environmental Information System (ENVIS)”:

1. It is a Central Sector Scheme.
2. Its purpose is to integrate country-wide efforts in environmental information collection, collation, storage, retrieval and dissemination through ENVIS websites.

Which of the statements given above is/are incorrect?

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

ANS: D

Explanation: Environmental Information System (ENVIS), a Central Sector Scheme of the Ministry has been implemented since 1982.

The purpose of the scheme is to integrate country-wide efforts in environmental information collection, collation, storage, retrieval and dissemination through ENVIS websites, which are dedicated to different interesting themes.

Source: Shankar IAS

Q.5) Which of the following is/are function/s of an ecosystem?

1. Energy flow
2. Nutrient cycling
3. Ecological succession

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The function of an ecosystem is a broad, vast and complete dynamic system. It can be studied under the following three heads.

- Energy flow
- Nutrient cycling (biogeochemical cycles)
- Ecological succession or ecosystem development

Source: Shankar IAS

Q.6) Consider the following statements regarding “food chains”:

1. In grazing food chain the primary source of energy is living plant.
2. In detritus food chain the source of energy is dead organic matter.

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

ANS: C

Explanation: In the grazing food chain the primary source of energy is living plant biomass while in the detritus food chain the source of energy is dead organic matter or detritus.

The two food chains are linked. The initial energy source for detritus food chain is the waste materials and dead organic matter from the grazing food chain.

Source: Shankar IAS

Q.7) Which of the following illustrates all possible transfers of energy and nutrients among the organisms in an ecosystem?

- a) Food chain
- b) Food web
- c) Energy flow
- d) Carrying capacity

ANS: B

Explanation: A food web illustrates, all possible transfers of energy and nutrients among the organisms in an ecosystem, whereas a food chain traces only one pathway of the food.

Source: Shankar IAS

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Q.8) Which of the following is/are cetaceans?

1. Dolphins
2. Porpoises
3. Whales

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Dolphins, Porpoises and whales are called cetaceans. A cetacean is a creature belonging to a group of water living mammals that have no hind limbs and a blowhole for breathing.

Source: Shankar IAS

Q.9) Which of the following is/are categories of ecological pyramids?

1. Pyramid of numbers
2. Pyramid of biomass
3. Pyramid of energy

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The steps of trophic levels expressed in a diagrammatic way are referred as ecological pyramids.

- The food producer forms the base of the pyramid and the top carnivore forms the tip. Other consumer trophic levels are in between.
- The pyramid consists of a number of horizontal bars depicting specific trophic levels which are arranged sequentially from primary producer level through herbivore, carnivore onwards.
- The length of each bar represents the total number of individuals at each trophic level in an ecosystem.

The ecological pyramids are of three categories:

- Pyramid of numbers,
- Pyramid of biomass, and
- Pyramid of energy or productivity.

Source: Shankar IAS

Q.10) Consider the following statements:

1. Bioaccumulation refers to how pollutants enter a food chain.
2. In bioaccumulation there is an increase in concentration of a pollutant from the environment to the first organism in a food chain.

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

ANS: C

Explanation: Bioaccumulation: It refers to how pollutants enter a food chain. In bioaccumulation there is an increase in concentration of a pollutant from the environment to the first organism in a food chain.

Source: Shankar IAS

Protected Areas - I

Q.1) Consider the following statements:

1. Wildlife sanctuaries enjoy a greater protection than National park.
2. Grazing of livestock is prohibited in National park.

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

ANS: B

Explanation: National Parks enjoy a greater degree of protection than sanctuaries.

- Certain activities which are regulated in sanctuaries, such as grazing of livestock, are prohibited in National Parks.
- Wildlife sanctuary can be created for a particular species (for e.g. grizzled giant squirrel w.l.s in srivalliputhur) whereas the national park is not primarily focused on a particular species.

Source: Shankar IAS

Q.2) Which of the following is/are can declare certain area/s as Wildlife sanctuaries and National parks?

1. State corporations
2. State government
3. Central government

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: The Wild Life (Protection) Act of 1972 provided for the declaration of certain areas by the State Government as wildlife sanctuaries if the area was thought to be of adequate ecological, geomorphological and natural significance.

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- The Wild Life (Protection) Act (WPA) of 1972 provided for the declaration of National Parks by the State Government in addition to the declaration of wildlife sanctuaries.
- The Central Government may also declare, Wild Life Sanctuary and National Park under certain conditions.

Source: Shankar IAS

Q.3) Who among the following is/are permitted to entry into a protected area?

1. A public servant on duty
2. A person who has been permitted by the Chief Wild Life Warden
3. A person who has any right over immovable property within the limits

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: No person other than:

1. A public servant on duty
2. A person who has been permitted by the Chief Wild Life Warden or the authorized officer to reside within the limits of the sanctuary/National Park
3. A person who has any right over immovable property within the limits of the sanctuary/National Park
4. A person passing through the sanctuary/National Park along a public highway
5. The dependents of the person referred to in clause (a), (b) or (c) above, Shall enter or reside in the sanctuary/National Park, except under and in accordance with the conditions of a permit granted.

Source: Shankar IAS

Q.4) Consider the following statements:

1. The Chief Wild Life Warden shall be the authority who shall control, manage and maintain all Protected Areas.
2. The State Board for Wild Life shall advise the State Government on the selection and management of areas to be declared as protected areas.

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

ANS: C

Explanation: The Chief Wild Life Warden shall be the authority who shall control, manage and maintain all Protected Areas.

- The National Board for Wild Life may make recommendations on the setting up of and management of National Parks, Sanctuaries and other protected areas and on matters relating to restriction of activities in those areas.
- The State Board for Wild Life shall advise the State Government on the selection and management of areas to be declared as protected areas.

Source: Shankar IAS

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Q.5) Consider the following statements regarding “conservation reserve”:

1. It came into effect by amending the wildlife protection act, 1972 in 2012.
2. It is managed through a Conservation Reserve Management Committee.

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

ANS: B

Explanation: The Amendment Act of 2003 provided for the creation of a new type of protected area called a Conservation Reserve.

- It is an area owned by the State Government adjacent to National Parks and sanctuaries for protecting the landscape, seascape and habitat of fauna and flora.
- It is managed through a Conservation Reserve Management Committee.

Source: Shankar IAS

Q.6) Which of the following is/are covered under the category – I of “marine protected areas”?

1. Mangroves
2. Creeks
3. Lagoons

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The MPAs in marine environment in India are primarily classified into following three categories:

- Category-I: This covers National Parks and Sanctuaries and having entire areas in intertidal/sub-tidal or mangroves, coral reefs, creeks, sea grass beds, algal beds, estuaries, lagoons.
- Category-II: This includes Islands, which have major parts in marine ecosystem and some part in terrestrial ecosystem.
- Category-III: This includes sandy beaches beyond intertidal line but occasionally interacting with the sea water.

Source: Shankar IAS

Q.7) Which of the following item/s is/are export prohibited in India?

1. Peacock Tail Feathers
2. Wood charcoal
3. Red Sanders wood

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The prohibited items are not permitted to be exported. An export license will not be given in the normal course for goods in the prohibited category.

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The following are the items prohibited in the flora and fauna category:

- Beef of cows, oxen and calf. Beef in the form of offal of cows, oxen and calf
- Meat of buffalo (both male and female) fresh and chilled and frozen
- Peacock Tail Feathers & its Handicrafts and articles
- Shavings & Manufactured Articles of shavings of Shed Antlers of Chital and Sambhar
- Sea shells
- Wood and wood products
- Fuel wood
- Wood charcoal
- Sandalwood in any form

Source: Shankar IAS

Q.8) Consider the following statements:

1. UNESCO introduced the designation of Biosphere Reserve in 1971.
2. UNESCO officially launched the Biosphere Reserve network in 1991.

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

ANS: A

Explanation: The International Coordinating Council (ICC) of UNESCO, November, 1971, introduced the designation 'Biosphere Reserve' for natural areas.

The concept of Biosphere Reserves was refined by a Task Force of UNESCO's MAB Programme in 1974, and BR network was formally launched in 1976.

Source: Shankar IAS

Q.9) Which of the following is/are function/s of "biosphere reserve"?

1. To ensure the conservation of landscapes, ecosystems, species and genetic variations.
2. To encourage the traditional resource use systems.
3. To understand the patterns and processes of functioning of ecosystems.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Functions of Biosphere Reserves Conservation:

- To ensure the conservation of landscapes, ecosystems, species and genetic variations.
- To encourage the traditional resource use systems;
- To understand the patterns and processes of functioning of ecosystems;
- To monitor the natural and human-caused changes on spatial and temporal scales.

Source: Shankar IAS

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Q.10) Which of the following is/are “hottest hot spots”?

1. Sundaland
2. Caribbean
3. Philippians

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The eight hottest hot spots:

1. Madagascar
2. Philippines
3. Sundaland
4. Brazil’s Atlantic Forest
5. Caribbean
6. Indo-Burma
7. Western Ghats/Sri Lanka
8. Eastern Arc and Coastal Forests of Tanzania/Kenya

Source: Shankar IAS

Protected Areas - II

Q.1) Which of the following is/are mechanism/s established under “Biological Diversity Act of 2002”?

1. National Green Tribunal
2. State Biodiversity Boards
3. Biodiversity Management Committees

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Biological Diversity Act 2002 enacted to help India to meet the objectives of the UN Convention on Biological Diversity (CBD) 1992.

Provides for a decentralized three-tiered mechanism for regulation:

- National Biodiversity Authority (NBA) at the national level,
- State Biodiversity Boards (SSB) at the state level, and
- Biodiversity Management Committees (BMC) at the local body level.

Source: FORUMIAS

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Q.2) The “People’s Biodiversity Register (PBR)” is often seen in news established through?

- a) National Green Tribunal Act
- b) Biological Diversity Act
- c) Forest Conservation Act
- d) Forest Rights Act

ANS: B

Explanation: People’s Biodiversity Register (PBR) document which contains comprehensive information on locally available Bio-resources including landscape and demography of a particular area.

Its provisions are derived from Biological Diversity Act, 2002.

Source: FORUMIAS

Q.3) Which of the following big cat/s is/are protected under “International Big Cats Alliance (IBCA)”?

- 1. Tiger
- 2. Lion
- 3. Puma

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The International Big Cats Alliance (IBCA) was also launched by India.

- IBCA was first proposed by India at an international group against poaching and illegal wildlife trade in 2019.
- Conservation of seven big cats namely Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar and Puma under IBCA.

Source: FORUMIAS

Q.4) Which of the following is recently completed its 50th anniversary in 2023?

- a) Project tiger
- b) Project elephant
- c) Project snow leopard
- d) Project rhino

ANS: A

Explanation: Prime Minister inaugurated the programme 'Commemoration of 50 years of Project Tiger' in Mysuru, Karnataka.

Project Tiger is a Centrally Sponsored scheme, launched in 1973.

Source: FORUMIAS

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Q.5) Which of the following tiger reserve/s has zero tiger/s?

1. Dampa
2. Satkosia
3. Indravati

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation:

TALE OF THE LESSER STRIPES			
While rise in big cat numbers is being applauded, there are some tiger reserves which have recorded less than 5 tigers			
GROUND ZERO			
Reserves	2018	2022	Rating
Sahyadri (Maha)	3	0	V Good
Satkosia (Odisha)	1	0	V Good
Kawal (T'gana)	1	0	Good
Kamlang (Arunachal)	4	0	Good
Indravati (Chhattisgarh)	3	1	Fair
STATIC STATS			
Achankamar (Ch'garh)	5	5	Good
Nameri (Assam)	3	3	Fair
Udanti Sitanadi (Ch'garh)	1	1	Fair
Mukundra (Raj)	1	1	Good
Namdapha (Arunachal)	1	1	Fair

Source: <https://timesofindia.indiatimes.com/city/nagpur/five-tiger-reserves-have-zero-tigers-yet-get-good-rating/articleshow/102294634.cms>

Q.6) The “Dholpur-Karauli Tiger Reserve (DKTR)” is recently seen in news located at?

- a) Rajasthan
- b) Maharashtra
- c) Chhattisgarh
- d) West Bengal

ANS: A

Explanation: National Tiger Conservation Authority (NTCA) has given its approval for the establishment of the Dholpur-Karauli Tiger Reserve in the state of Rajasthan.

Source: FORUMIAS

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Q.7) Which of the following river/s is/are flows through “Kaziranga National Park”?

1. Diphlu
2. Mora Dhansiri
3. Brahmaputra

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: President Participated in Gaj Utsav at Kaziranga National Park and Tiger Reserve (KNPTR) in Assam to mark 30 years of Project Elephant.

- It is located on edge of the Eastern Himalayan biodiversity hotspots – Golaghat and Nagaon district.
- Brahmaputra, Diphlu, Mora Diphlu and Mora Dhansiri flows through the park.

Source: FORUMIAS

Q.8) Consider the following statements regarding “elephant”:

1. Tamil Nadu highest number of elephants in India.
2. Project Elephant was launched in 1982.

Which of the statements given above is/are incorrect?

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

ANS: C

Explanation: Highest number of elephants: Karnataka, followed by Assam and Kerala. Project Elephant was launched in 1992 by MoEFCC.

Source: FORUMIAS

Q.9) Which of the following organization releases the “State of Rhino 2023 report”?

- a) World Economic Forum
- b) IUCN
- c) International Rhino Foundation
- d) UNEP

ANS: C

Explanation: International Rhino Foundation (IRF) released the State of Rhino 2023 report.

- IRF was founded as International Black Rhino Foundation in 1991.
- Dedicated to survival of all five living rhino species.

Source: FORUMIAS

Q.10) The term “Funga” is often seen in news related to?

- a) Vaccine
- b) Bacteria
- c) Flora & Fauna
- d) Fossils

ANS: C

Explanation: The Fungi Foundation through UN Biodiversity has urged people globally to use the word ‘Funga’ whenever they say, ‘flora and fauna’, as part of the trinity of life on Earth.

Source: FORUMIAS

Biodiversity & Conservation

Q.1) Consider the following statements regarding “Genetic diversity”:

- 1. It is concerned with the variation in genes within a particular species.
- 2. It does not allow species to adapt to changing environments.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: Genetic diversity is concerned with the variation in genes within a particular species. Genetic diversity allows species to adapt to changing environments.

- This diversity aims to ensure that some species survive drastic changes and thus carry on desirable genes.
- The survival of individuals ensures the survival of the population. The genetic diversity gives us beautiful butterflies, roses, parakeets or coral in a myriad hues, shapes and sizes.

Source: Shankar IAS

Q.2) Consider the following statements:

- 1. Alpha diversity is a measure of the overall diversity for the different ecosystems within a region.
- 2. Beta diversity is a comparison of diversity between ecosystems, usually measured as the change in amount of species between the ecosystems.

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

ANS: B

Explanation: Species richness is the measure of number of species found in a community:

- a) Alpha diversity refers to the diversity within a particular area or ecosystem, and is usually expressed by the number of species (i.e., species richness) in that ecosystem.
- b) Beta diversity is a comparison of diversity between ecosystems, usually measured as the change in amount of species between the ecosystems

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c) Gamma diversity is a measure of the overall diversity for the different ecosystems within a region.

Source: Shankar IAS

Q.3) The building blocks of plants, animals and humans are identical, and are made of which of the following element/s?

1. Carbon
2. Hydrogen
3. Nitrogen

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The building blocks of plants, animals and humans are identical, and are made of the four elements - carbon, oxygen, nitrogen and hydrogen.

Source: Shankar IAS

Q.4) Which of the following is/are natural cause/s of biodiversity loss?

1. Extension of agriculture
2. Floods
3. Earthquakes

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Loss of biodiversity occurs when either a particular species is destroyed or the habitat essential for its survival is damaged.

- The latter is more common as habitat destruction is inevitable fallout of development.
- Extinction of species may also occur due to environmental reasons like ecological substitutions, biological factors and pathological causes which can be caused either by nature or man.

Natural causes:

- floods,
- earthquakes,
- landslides,
- rivalry among species,
- Lack of pollination and diseases.

Source: Shankar IAS

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Q.5) Which of the following is not in-situ conservation method?

- a) Botanical garden
- b) Reserved forests
- c) Sanctuaries
- d) Biosphere reserves

ANS: A

Explanation: In-situ conservation: Conserving the animals and plants in their natural habitats is known as in-situ conservation.

The established natural habitats are:

- National parks
- Sanctuaries
- Biosphere reserves and
- Reserved forests
- Protected forests

Source: Shankar IAS

Q.6) The red data book is often seen in news related to which of the following?

- a) IUCN
- b) WEF
- c) UNEP
- d) UNDP

ANS: A

Explanation: Species judged as threatened are listed by various agencies as well as by some private organizations.

- The most cited of these lists is the Red Data Book. It is a loose-leaf volume of information on the status of many kinds of species.
- This volume is continually updated and is issued by the International Union for Conservation of Nature (IUCN) located in Morges, Switzerland.

Source: Shankar IAS

Q.7) The "Nal Sarovar Bird Sanctuary" is recently seen in news located at?

- a) Gujarat
- b) Maharashtra
- c) Haryana
- d) Uttar Pradesh

ANS: A

Explanation: A yellow-breasted bunting, a critically endangered species of bird which is commonly spotted in the Himalayan region and east and central Asia was sighted at Nal Sarovar Bird Sanctuary near Ahmedabad.

This is only the second sighting of this bird in Gujarat and the first in Nal Sarovar, a wetland which is a Ramsar site.

Source: <https://indianexpress.com/article/cities/ahmedabad/critically-endangered-yellow-breasted-bunting-sighted-for-first-time-in-gujarats-nal-sarovar-9187480/>

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Q.8) Which of the following bustard species is/are found in India?

1. Great Indian bustard
2. Macqueen's bustard
3. Bengal florican

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: GIBs are the largest among the four bustard species found in India, the other three being MacQueen's bustard, lesser florican and the Bengal florican.

Source: <https://indianexpress.com/article/explained/explained-great-indian-bustards-of-kutch-their-habitats-existential-threat-7417139/>

Q.9) Which of the following country/countries is/are adopted the Global declaration of River Dolphins by 2030?

1. India
2. China
3. Thailand

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: A

Explanation: 11 Countries signed first-of-its-kind Global declaration of River Dolphins by 2030 in Bogota, Colombia.

Global declaration of River Dolphins by 2030 is adopted by River dolphin range states-Bangladesh, Bolivia, Brazil, Cambodia, Colombia, Ecuador, India, Nepal, Pakistan, Peru and Venezuela.

Source: FORUMIAS

Q.10) The "Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act" was enacted in?

- a) 1951
- b) 1971
- c) 1991
- d) 2001

ANS: D

Explanation: The Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act was enacted in 2001 under Article 27(3) (b) of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).

Source: FORUMIAS

Environment Legislations

Q.1) "It shall be duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures" related to?

- a) Article 42
- b) Article 48
- c) Article 51 – A (g)
- d) Article 61

ANS: C

Explanation: Article 51-A (g) Provides: It shall be duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.

Source: Shankar IAS

Q.2) Which of the following provision/s covered under "wildlife protection act, 1972"?

- 1. Protection of various species of wild animals.
- 2. Protection of wildlife habitat.
- 3. Regulation and control of trade in the products derived from various parts of wild animals.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The Wild Life (Protection) Act, 1972 (53 of 1972), provides the legal framework for the protection of various species of wild animals, management of their habitat and also for the regulation and control of trade in the products derived from various parts of wild animals.

Source: <https://pib.gov.in/PressReleaseframePage.aspx?PRID=2011928>

Q.3) Consider the following statements regarding "wildlife protection act, 1972":

- 1. It was last amended in 2017.
- 2. Section 49 M of the Act provides for registration of possession, transfer and birth and reporting of death of living scheduled animal species which are listed in the Appendices of CITES.

Which of the statements given above is/are incorrect?

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

ANS: A

Explanation: The Wild Life (Protection) Act, 1972 (53 of 1972), provides the legal framework for the protection of various species of wild animals, management of their habitat and also for the regulation and control of trade in the products derived from various parts of wild animals.

- The Act was last amended in 2022. The Wild life (Protection) Amendment Act, 2022 has come into force since 1st April 2023.

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- Section 49 M of the Act provides for registration of possession, transfer and birth and reporting of death of living scheduled animal species which are listed in the Appendices of CITES and as such listed in the Schedule IV of the Wild Life (Protection) Act, 1972.

Source: <https://pib.gov.in/PressReleasframePage.aspx?PRID=2011928>

Q.4) Which of the following article/s of Indian constitution has the genesis of Environmental (Protection) Act, 1986?

1. Article 14
2. Article 48A
3. Article 51 A (g)

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: The genesis of the Environmental (Protection) Act, 1986, thus, is in Article 48A (Directive Principles of State Policy) and Article 51A (g) (Fundamental Duties) of the Indian Constitution.

Source: Shankar IAS

Q.5) Consider the following statements regarding “Environmental (Protection) Act, 1986”:

1. It debars the Civil Courts from having any jurisdiction to entertain any suit or proceeding in respect of an action, direction, order issued by Central Government or other statutory authority under this Act.
2. The provisions of this act and the rules or orders made under this act shall have effect and supremacy over anything inconsistent contained in any enactment other than this act.

Which of the statements given above is/are incorrect?

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

ANS: D

Explanation: As compared to all other previous laws on environment protection, the Environment (Protection) Act, 1986 is a more effective and bold measure to fight the problem of pollution.

- The Act debars the Civil Courts from having any jurisdiction to entertain any suit or proceeding in respect of an action, direction, order issued by Central Government or other statutory authority under this Act.
- Under the Act, there will be supremacy of provision. In other words, the provisions of this Act and the rules or orders made under this Act shall have effect and supremacy over anything inconsistent contained in any enactment other than this Act.

Source: Shankar IAS

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Q.6) Which of the following is/are objective/s of “National Forest Policy, 1988”?

1. Conserving the natural heritage of the country.
2. Checking soil erosion and denudation in the catchments areas.
3. Checking the extension of sand-dunes in the desert areas.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The principal aim of National Forest Policy, 1988 is to ensure environmental stability and maintenance of ecological balance including atmospheric equilibrium which are vital for sustenance of all life forms, human, animal and plant.

Objectives:

- Conserving the natural heritage of the country by preserving the remaining natural forests with the vast variety of flora and fauna, which represent the remarkable biological diversity and genetic resources of the country.
- Checking soil erosion and denudation in the catchments areas of rivers, lakes, reservoirs in the “interest of soil and water conservation, for mitigating floods and droughts and for the retardation of siltation of reservoirs.
- Checking the extension of sand-dunes in the desert areas of Rajasthan and along the coastal tracts.

Source: Shankar IAS

Q.7) “Fair and equitable sharing of the benefits arising from the utilization of genetic resources” related to which of the following?

- a) Wildlife protection Act, 1972
- b) Environmental (Protection) Act, 1986
- c) Biological Diversity Act 2002
- d) National green tribunal Act, 2010

ANS: C

Explanation: The Biological Diversity Act 2002 was born out of India’s attempt to realize the objectives enshrined in the United Nations Convention on Biological Diversity (CBD) 1992 which recognizes the sovereign rights of states to use their own Biological Resources.

The primary objective of the act is fair and equitable sharing of the benefits arising from the utilization of genetic resources.

Source: Shankar IAS

Q.8) The scheduled tribes and other traditional forest dwellers act passed in which of the following year?

- a) 2001
- b) 2006
- c) 2010
- d) 2015

ANS: B

Explanation: The scheduled tribes and other traditional forest dwellers (recognition of forest rights) act, 2006 provides for the restitution of deprived forest rights across India, including both individual rights to cultivated land in forestland and community rights over common property resources.

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Source: Shankar IAS

Q.9) How many schedule/s is/are there in “wildlife protection act”?

- a) 4
- b) 5
- c) 6
- d) 2

ANS: A

Explanation: The number of schedules in act is four:

- Schedule I: containing animal species enjoying the highest level of protection.
- Schedule II: for animal species subject to a lesser degree of protection.
- Schedule III: for protected plant species, and
- Schedule IV: for scheduled specimens under CITES.

Source: FORUMIAS

Q.10) The drug “Ketoprofen” is recently seen in news related to?

- a) Treatment of livestock
- b) Protection of bustards
- c) Artificial insemination
- d) Coral protection

ANS: A

Explanation: Drugs Technical Advisory Board (DTAB) recommended a ban on two drugs harmful to vultures. DTAB agreed to prohibit drugs Ketoprofen and Aceclofenac for treatment of livestock.

Source: FORUMIAS

Revision

Q.1) Which of the following way/s is sulfur released to atmosphere?

1. Volcanic eruptions
2. Combustion of fuels
3. Decomposition

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Sulfur enters the atmosphere from several sources like volcanic eruptions, combustion of fossil fuels, from surface of ocean and from gases released by decomposition.

- Atmospheric hydrogen sulphide also gets oxidized into sulphur dioxide.
- Atmospheric sulphur dioxide is carried back to the earth after being dissolved in rainwater as weak sulphuric acid.

Source: Shankar IAS

Prelims Marathon Compilation April 2024

Q.2) Which of the following is/are participates in primary succession?

1. Microbes
2. Lichens
3. Mosses

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: In primary succession on a terrestrial site the new site is first colonized by a few hardy pioneer species that are often microbes, lichens and mosses.

The pioneers over a few generations alter the habitat conditions by their growth and development.

Source: Shankar IAS

Q.3) When succession is brought about by living inhabitants of that community itself, the process is called?

- a) Allogenic succession
- b) Autogenic succession
- c) Heterotrophic succession
- d) Autotrophic succession

ANS: A

Explanation: When succession is brought about by living inhabitants of that community itself, the process is called autogenic succession, while change brought about by outside forces is known as allogenic succession.

Source: Shankar IAS

Q.4) Which of the following area/s is/are tundra ecosystem found?

1. Alaska
2. Canada
3. New Zealand

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Arctic tundra extends as a continuous belt below the polar ice cap and above the tree line in the northern hemisphere.

- It occupies the northern fringe of Canada, Alaska, European Russia, Siberia and island group of Arctic Ocean.
- On the South Pole, tundra is very small since most of it is covered by ocean.

Source: Shankar IAS

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Q.5) Consider the following statements regarding boreal forests:

1. They are characterized by thin podzols.
2. The productivity and community stability of a boreal forest are lower than those of any other forest ecosystem.

Which of the statements given above is/are incorrect?

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

ANS: D

Explanation: Cold regions with high rainfall, strong seasonal climates with long winters and short summers are characterized by boreal coniferous forest.

- Boreal forest soils are characterized by thin podzols and are rather poor.
- Both because, the weathering of rocks proceeds slowly in cold environments and because the litter derived from conifer needle (leaf) is decomposed very slowly and is not rich in nutrients.
- The productivity and community stability of a boreal forest are lower than those of any other forest ecosystem.

Source: Shankar IAS

Q.6) Consider the following statements:

1. The temperate rain forests exhibit a marked seasonality with regard to temperature and rainfall.
2. The diversity of plants and animals is much low as compared to the tropical rainforest.

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

ANS: C

Explanation: The temperate rain forests exhibit a marked seasonality with regard to temperature and rainfall.

- Rainfall is high, and fog may be very heavy. It is the important source of water than rainfall itself.
- The biotic diversity of temperate rain forests is high as compared to other temperate forest.
- However, the diversity of plants and animals is much low as compared to the tropical rainforest.

Source: Shankar IAS

Q.7) Which of the following is/are characteristic/s of tropical rain forest?

1. The annual rainfall exceeds 200 cm and is generally distributed throughout the year.
2. Soils of tropical rainforests are red latosols.
3. Tropical rain forests are among the most diverse and rich communities on the earth.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Tropical rain forests occur near the equator. Tropical rain forests are among the most diverse and rich communities on the earth.

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- Both temperature and humidity remain high and more or less uniform.
- The annual rainfall exceeds 200 cm and is generally distributed throughout the year. The flora is highly diversified.
- The extreme dense vegetation of the tropical rain forests remains vertically stratified with tall trees often covered with vines, creepers, lianas, epiphytic orchids and bromeliads.
- The lowest layer is an understory of trees, shrubs, herbs, like ferns and palms.
- Soils of tropical rainforests are red latosols, and they are very thick.

Source: Shankar IAS

Q.8) Consider the following statements:

1. Neustons are unattached organisms which live at the air water interface such as floating plants.
2. Nektons contain animals which are swimmers.

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

ANS: C

Explanation: Neuston: These are unattached organisms which live at the air-water interface such as floating plants, etc.

Nekton: This group contains animals which are swimmers.

Source: Shankar IAS

Q.9) Which of the following is/are limiting factors of aquatic ecosystem?

1. Sunlight
2. Oxygen
3. Moisture

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Sunlight and oxygen are most important limiting factors of the aquatic ecosystems whereas moisture and temperature are the main limiting factors of terrestrial ecosystem.

Source: Shankar IAS

Q.10) Consider the following statements regarding “bats”:

1. They are social animals.
2. They are the second largest group of mammals after rodents.

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

ANS: C

Explanation: Bats are social animals. They hang UPSIDE DOWN when they sleep. They feed at night (they are “nocturnal”) and spend the day sleeping in caves or in tree tops. They are the second largest group of mammals after rodents.

Source: Shankar IAS

Environmental Organizations

Q.1) Consider the following statements regarding “Animal Welfare Board of India”:

1. It is a statutory advisory body on animal welfare laws and promotes animal welfare in the country.
2. It was established under the provisions of wildlife protection act, 1972.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: The Animal Welfare Board of India is a statutory advisory body on Animal Welfare Laws and promotes animal welfare in the country.

The Animal Welfare Board of India, the first of its kind to be established by any Government in the world, was set up in 1962, in accordance with Section 4 of the Prevention of Cruelty to Animals Acts 1960.

Source: Shankar IAS

Q.2) “Shrimati Rukmini Devi Arundale” was associated with which of the following organization?

- a) Wildlife Institute of India
- b) Animal Welfare Board of India
- c) Zoological Society of India
- d) Archaeological Society of India

ANS: B

Explanation: Shrimati Rukmini Devi Arundale pioneered the setting up of the Animal Welfare Board, with its Headquarters at Chennai. She guided the activities of the Board for nearly twenty years till her demise in 1986.

Source: Shankar IAS

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Q.3) Consider the following statements regarding “Central Zoo Authority”:

1. It was established through amendment to wildlife protection act in 2002.
2. Only such zoos which were operated in accordance with the norms and standards prescribed by the Central Zoo Authority would be granted ‘recognition’ to operate by the Authority.

Which of the statements given above is/are incorrect?

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

ANS: A

Explanation: The amendment made to the Wild Life (Protection) Act in 1991 added a new chapter dealing with zoos to the Act and allowed for the Central Government to constitute an authority known as the Central Zoo Authority to oversee the functioning and development of zoos in the country. According to the provisions of this chapter, only such zoos which were operated in accordance with the norms and standards prescribed by the Central Zoo Authority would be granted ‘recognition’ to operate by the Authority.

Source: Shankar IAS

Q.4) Which of the following is/are function/s of central zoo authority?

1. To co-ordinate the acquisition, exchange and loaning of animals for breeding purposes.
2. To identify priorities and themes with regard to display of captive animals in a zoo.
3. To identify endangered species of wild animals for purposes of captive breeding and assigning responsibility in this regard to a zoo.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The following are the functions of the Central Zoo Authority as specified in the Act:

- To specify the minimum standards for housing, upkeep and veterinary care of animals kept in a zoo
- To evaluate and assess the functioning of zoos with respect to the standards or the norms as are prescribed
- To recognize and derecognize zoos
- To identify endangered species of wild animals for purposes of captive breeding and assigning responsibility in this regard to a zoo
- To co-ordinate the acquisition, exchange and loaning of animals for breeding purposes
- To ensure maintenance of stud-books of endangered species of wild animals bred in captivity
- To identify priorities and themes with regard to display of captive animals in a zoo.

Source: Shankar IAS

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Q.5) Which of the following is/are power/s of “Central Zoo Authority”?

1. Recognition of Zoos
2. Cognizance of offences
3. Permission for acquisition of wild / captive animals

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Powers of Central Zoo Authority:

- Recognition of zoos
- Permission for acquisition of wild / captive animals
- Cognizance of offences
- Grant of licenses, certificate of ownership, recognition, etc.

Source: Shankar IAS

Q.6) Which of the following statement/s is/are correct about “National Biodiversity Authority (NBA)”?

1. It is non statutory body.
2. It was established in 2010.
3. It provides advice to Government of India on issues of conservation, sustainable use of biological resources.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: A

Explanation: The National Biodiversity Authority (NBA) was established in 2003 to implement India’s Biological Diversity Act (2002).

The NBA is a Statutory, Autonomous Body and it performs facilitative, regulatory and advisory function for the Government of India on issues of conservation, sustainable use of biological resources and fair and equitable sharing of benefits arising out of the use of biological resources.

Source: Shankar IAS

Q.7) Which of the following is/are function/s of “Wildlife Crime Control Bureau”?

1. It has the powers to punish the illegal traders.
2. It implements the obligations under various international Conventions and protocols.
3. Development of infrastructure and capacity building for scientific and professional investigation.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: The Government of India constituted a statutory body, the Wildlife Crime Control Bureau on 6th June 2007, by amending the Wildlife (Protection) Act, 1972.

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Functions of Wildlife Crime Control Bureau:

- (i) Collection, collation of intelligence and its dissemination and establishment of a centralized Wildlife Crime data bank;
- (ii) Co-ordination of actions by various enforcement authorities towards the implementation of the provisions of this Act.
- (iii) Implementation of obligations under the various international Conventions and protocols
- (iv) Assistance to concerned authorities in foreign countries and concerned international organizations to facilitate co-ordination and universal action for wildlife crime control;
- (v) Development of infrastructure and capacity building for scientific and professional investigation;

Source: Shankar IAS

Q.8) Consider the following statements regarding “Zoological Survey of India”:

1. It was established in 1916.
2. It is the designated repository for the national zoological collection.

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

ANS: C

Explanation: Zoological Survey of India established in 1916, traces its origin to Zoological Section of the Indian Museum at Calcutta in 1875.

Zoological Survey of India declared as the Designated Repository for the National Zoological Collection as per the National Biodiversity Act, 2002.

Source: Shankar IAS

Q.9) “Global Biodiversity Framework Fund (GBFF)” is managed by which of the following?

- a) World Bank
- b) Global Environment Facility
- c) World Economic Forum
- d) UNFCCC

ANS: B

Explanation: GBFF was launched at the 7th Assembly of the Global Environment Facility (GEF) in Canada in 2023 where Canada and the United Kingdom made the initial contributions.

It is managed by Global Environment Facility (GEF) and the Trustee of the GBFF – World Bank.

Source: FORUMIAS

Q.10) The “Montreal Protocol” is often seen in news related to?

- a) Ozone depleting substances
- b) Primary health
- c) Education
- d) Tribal welfare

ANS: A

Explanation: Montreal Protocol - It is an international agreement designed to protect the stratospheric ozone layer by regulating the production and consumption of ozone depleting substances (ODS).

Source: FORUMIAS

Environmental Organizations - II

Q.1) The “India Climate Energy Dashboard (ICED)” is often seen in news released by?

- a) UNDP
- b) UNEP
- c) WEF
- d) NITI Aayog

ANS: D

Explanation: NITI Aayog recently released ICED 3.0.

- ICED: It is one-stop platform for near real-time data on the energy sector, climate, and related economic datasets based on government-published sources.
- It is useful in monitoring the progress of India's clean energy transition journey.

Source: FORUMIAS

Q.2) Which of the following is/are halogen element/s?

- 1. Chlorine
- 2. Bromine
- 3. Iodine

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: As per a recent study, oceans cool the planet by releasing short-lived halogens that contribute 8-10 per cent of cooling.

SLH (lifetime of less than six months) are gases that contain the halogen elements chlorine, bromine, or iodine.

Source: FORUMIAS

Q.3) The term “Methylovivimicrobium buryatense 5GB1C” is recently seen in news related to?

- a) Bio – fuel
- b) Methane consumer
- c) Bio – alcohol
- d) Nitrogen fixation bacteria

ANS: B

Explanation: A strain of bacteria could potentially remove methane from major emission sites such as landfills, paddy fields, and oil and gas wells, according to a new study.

- Harnessing these bacteria on a large scale can keep 240 million tones of methane from reaching the atmosphere by 2050, the study published in the journal Proceedings of the National Academy of Sciences showed.
- The bacterial strain Methylovivimicrobium buryatense 5GB1C consumes methane, which is over 85 times more potent than carbon dioxide (CO₂) on a 20-year timescale. It is responsible for nearly 30 per cent of the total global warming.

Source: <https://www.downtoearth.org.in/news/climate-change/now-a-bacteria-that-can-eat-methane-can-it-reduce-global-warming-researchers-say-it-s-possible-91289>

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Q.4) Which of the following country/countries is/are signatory of “Just Energy Transition Partnership (JET-P)”?

1. India
2. China
3. South Africa

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: A

Explanation: Just Energy Transition Partnership (JET-P) is a financing mechanism that aims to support developing countries in their transition from fossil fuel-based energy systems to clean and renewable energy sources.

- Senegal has become the fourth country after South Africa, Indonesia and Vietnam to sign the JET-P deal (India not a Signatory).
- The donor pool consists of countries like Japan, the USA, Canada, Denmark, France, Germany, Italy, Norway, the EU, and the UK.

Source: FORUMIAS

Q.5) The “Adaptation Gap Report” is often seen in news released by?

- a) UNDP
- b) UNEP
- c) World Bank
- d) WEF

ANS: B

Explanation: Adaptation Gap Report 2023 is released by UNEP.

- Adaptation gap is the difference between implemented adaptation and societal set goals. Adaptation finance needs are 10-18 times higher than current public flows.
- Adaptation finance gap is expanding, now at US\$194-366 billion annually.
- Action plan on loss and damage has overlooked non-economic losses like cultural heritage and indigenous knowledge.

Source: FORUMIAS

Q.6) Consider the following statements regarding “World Meteorological Organization”:

1. It is not a specialized agency of United Nations.
2. The State of the Global Climate 2022 report is released by WMO.

Which of the statements given above is/are incorrect?

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

ANS: A

Explanation: WMO is a specialized agency of UN and UN's authoritative voice on the state of Earth's atmosphere, its interaction with the oceans and the climate.

It released the State of the Global Climate 2022 report.

Source: FORUMIAS

Prelims Marathon Compilation April 2024

Q.7) Consider the following statements regarding “National Institute of Disaster Management (NIDM)”:

1. It is a statutory organization under the National Disaster Management Act 2005.
2. It is recently got global recognition as centre of excellence on landslide disaster reduction for the period 2023-2026.

Which of the statements given above is/are incorrect?

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

ANS: D

Explanation: NIDM is a statutory organization under the National Disaster Management Act 2005 (under Ministry of Home Affairs).

- It is tasked with human resource development, capacity building, training, research, documentation, and policy advocacy in the field of disaster management.
- NIDM recently got global recognition as ‘centre of excellence’ on landslide disaster reduction for the period 2023-2026.

Source: FORUMIAS

Q.8) Which of the following organization released the “Water, Ice, Society, and Ecosystems (WISE) report for the Hindu Kush Himalaya (HKH)”?

- a) UNEP
- b) WMO
- c) WEF
- d) ICIMOD

ANS: D

Explanation: The International Centre for Integrated Mountain Development (ICIMOD) released Water, Ice, Society, and Ecosystems (WISE) report for the Hindu Kush Himalaya (HKH).

Source: FORUMIAS

Q.9) The term “Atlantification” is recently in news associated with?

- a) Arctic ocean
- b) Indian ocean
- c) Pacific ocean
- d) Antarctica ocean

ANS: A

Explanation: Atlantification is making the Arctic Ocean saltier and warmer. It is a process wherein warm water from Atlantic is being advected into Arctic Ocean in increasing amounts. It makes parts of Barents Sea to more closely resemble the Atlantic.

Source: FORUMIAS

Q.10) The “Ureilite” is recently seen in news related to?

- a) Bacteria
- b) AI robot
- c) Meteorite
- d) Asteroids

ANS: C

Explanation: As per a study Dhala crater of Madhya Pradesh was result of collision of a meteorite, called Ureilite.

- Ureilites are a rare class of primitive meteorites present on Earth. It consists of silicate rock, mostly olivine and pyroxene, carbon (diamond or graphite), metal sulphides.
- Meteor impact craters in India also found in Ramgarh (Rajasthan) and Lonar (Maharashtra).

Source: FORUMIAS

India and Climate Change

Q.1) Consider the following statements:

1. 90 percent of Earth’s ozone resides in the stratosphere.
2. High depletion of ozone layer takes place at equator.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: Ozone layer: It is a thin shield of gas in Earth’s Stratosphere and it absorbs the sun’s ultraviolet rays.

- Nearly 90% of Earth’s ozone resides in the stratosphere.
- Ozone hole: Region of exceptionally depleted ozone in the stratosphere over the Antarctic and Arctic.

Source: FORUMIAS

Q.2) The term “Hunga Tonga-Hunga Ha’apai” is often seen in news related to?

- a) Canyon
- b) Volcano
- c) Underground river stream
- d) Microbial species

ANS: B

Explanation: Hunga Tonga-Hunga Ha’apai is a submarine volcano in the Tongan archipelago located in the southern Pacific Ocean, which erupted in January 2022.

As per recent study, eruption of Hunga Tonga-Hunga Ha’apai Volcano may have potentially impacted ozone layer.

Source: FORUMIAS

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Q.3) Consider the following statements regarding “Montreal Protocol”:

1. It is first universally ratified Treaty of United Nations.
2. Kigali Amendment to Montreal Protocol was adopted in 2020.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: Montreal Protocol is a global environmental treaty to eliminate the production and use of Ozone Depleting Substances (ODS). It is first universally ratified treaty of UN.

Kigali Amendment to Montreal Protocol was adopted in 2016 (entered into force 2019), to phase down production and consumption of Hydro-fluorocarbons (HFCs).

Source: FORUMIAS

Q.4) Consider the following statements regarding “International Cryosphere Climate Initiative (ICCI)”:

1. It is UN specialized agency to preserve Earth’s cryosphere.
2. Its programs targets the climate dynamics of cryosphere, focuses on the global implications of cryosphere warming.

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

ANS: B

Explanation: ICCI is a network of experts and researchers working with governments and organizations to preserve Earth’s cryosphere.

ICCI programs targets the climate dynamics of cryosphere, focuses on the global implications of cryosphere warming.

Source: FORUMIAS

Q.5) The “Amundsen Sea” recently seen in news related to?

- a) Asia
- b) Europe
- c) Antarctica
- d) North America

ANS: C

Explanation: Accelerated ice melt was noticed in West Antarctica through various studies and computer simulations.

- West Antarctic ice sheet, if completely lost, could contribute to sea level rise of up to 5 meters.
- Ocean-driven melting of floating ice shelves in the Amundsen Sea is the main process contributing to sea level rise.
- The Amundsen Sea is located off the coast of West Antarctica.

Source: FORUMIAS

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Q.6) Which of the following research station/s is/are built at Antarctica by India?

1. Dakshin Gangotri
2. Maitri
3. Himadri

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Indian Antarctic program, which began in 1981, built three research base stations in Antarctica, named Dakshin Gangotri (1983), Maitri (1988) and Bharati (2012).

As of today, Maitri and Bharati are fully operational.

Source: FORUMIAS

Q.7) The term “Blue Ocean event” is recently seen in news related to?

- a) Arctic ocean
- b) Indian ocean
- c) Pacific ocean
- d) Atlantic ocean

ANS: A

Explanation: Blue Ocean event refers to a situation in which the Arctic Ocean’s ice area drops below 1 Million Sq.Km leading to the change of arctic surface colour from white to blue.

Process reduces the amount of sunlight reflected into space, leading to further warming and ice loss.

Source: FORUMIAS

Q.8) Consider the following statements regarding “UNFCCC”:

1. It is an international environmental treaty seeking to reduce greenhouse gases to prevent global warming.
2. Its headquarters is located at Rio, Brazil.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: UNFCCC is an international environmental treaty seeking to reduce greenhouse gases to prevent global warming.

Signed in 1992 at United Nations Conference on Environment and Development also known as the Earth Summit and is headquartered in Bonn (Germany).

Source: FORUMIAS

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Q.9) Consider the following statements regarding “Global Green Credit Initiative (GGCI)”:

1. It is launched by Australia.
2. It serves as the international platform for dialogue, collaboration, and the exchange of innovative environmental programs and instruments.

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

ANS: B

Explanation: Global Green Credit Initiative (GGCI) is launched by India at COP 28.

It serves as the international platform for dialogue, collaboration, and the exchange of innovative environmental programs and instruments.

Source: FORUMIAS

Q.10) “The Global Cooling Pledge” is recently seen in news initiated by?

- a) France
- b) Germany
- c) UAE
- d) India

ANS: C

Explanation: The Global Cooling Pledge is initiated by UAE. It aims to commit the countries to reduce their cooling emissions by at least 68% by 2050.

Source: FORUMIAS

Climate Change Organizations

Q.1) Which of the following is NOT resulted from the discussion of earth summit?

- a) Rio Declaration on Environment and Development
- b) Montreal protocol
- c) Agenda 21
- d) Forest principles

ANS: B

Explanation: The Earth Summit resulted in the following documents:

- Rio Declaration on Environment and Development
- Agenda 21
- Forest Principles

Source: Shankar IAS

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Q.2) The “clearing house mechanism” is recently seen in news related to?

- a) UNFCCC
- b) UNCBD
- c) Ramsar convention
- d) WEF

ANS: B

Explanation: Expertise in managing information and technology varies enormously from country to country. For this reason, the Convention on Biological Diversity has established a "Clearing-House Mechanism" (CHM) to ensure that all governments have access to the information and technologies they need for their work on biodiversity.

- The term "clearing-house" originally referred to a financial establishment where checks and bills were exchanged among member banks so that only the net balances need to be settled in cash.
- Today, its meaning has been extended to include any agency that brings together seekers and providers of goods, services or information, thus matching demand with supply.

Source: [https://bch.cbd.int/help/topics/en/What is a Clearing House Mechanism.html#:~:text](https://bch.cbd.int/help/topics/en/What_is_a_Clearing_House_Mechanism.html#:~:text=)

Q.3) Which of the following is related to Bio-safety to the Convention on Biological Diversity?

- a) Cartagena protocol
- b) Vienna protocol
- c) Stockholm protocol
- d) Nairobi protocol

ANS: A

Explanation: The Cartagena Protocol on Biosafety is an agreement to the Convention on Biological Diversity.

- The Protocol establishes procedures for regulating the import and export of LMOs from one country to another.
- The Protocol also requires Parties to ensure that LMOs being shipped from one country to another are handled, packaged and transported in a safe manner.

Source: Shankar IAS

Q.4) The “Advance Informed Agreement” is associated with which of the following?

- a) Nagoya protocol
- b) Cartagena protocol
- c) Rotterdam convention
- d) Rio convention

ANS: B

Explanation: Under the Protocol, the Advance Informed Agreement (AIA) procedure applies to the first intentional trans-boundary movement of an LMO for intentional introduction into the environment of the Party of import.

The advance informed agreement or AIA procedure is designed to ensure that before an LMO is imported into a country for the first time for intentional introduction into the environment.

Source: Shankar IAS

Q.5) Which of the following addresses traditional knowledge associated with genetic resources with provisions on access, benefit-sharing and compliance?

- a) Nagoya protocol
- b) Cartagena protocol
- c) Rotterdam convention
- d) Rio convention

ANS: A

Explanation: The Nagoya Protocol addresses traditional knowledge associated with genetic resources with provisions on access, benefit-sharing and compliance.

It also addresses genetic resources where indigenous and local communities have the established right to grant access to them.

Source: Shankar IAS

Q.6) Which of the following is/are strategic goal/s of “Aichi Biodiversity Target/s”?

1. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.
2. Increase the direct pressures on biodiversity.
3. To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Aichi Biodiversity Targets:

- Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
- Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use
- Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
- Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
- Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building

Source: <https://www.cbd.int/sp/targets>

Q.7) The famous “waterfowl convention” is often seen in news related to?

- a) Wetlands
- b) Ozone depleting substances
- c) Persistent organic pollutants
- d) Endemic species

ANS: A

Explanation: The Convention on Wetlands [waterfowl convention] is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

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It was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975, and it is the only global environmental treaty that deals with a particular ecosystem.

Source: Shankar IAS

Q.8) Which of the following site/s is/are part of “Montreux Record”?

1. Keoladeo National Park
2. Loktak Lake
3. Kaziranga National Park

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Keoladeo National Park, Rajasthan and Loktak Lake, Manipur have been included in Montreux Record in 1990 and in 1993 respectively.

- Chilika Lake, Orissa included in Montreux Record in 1993 has been removed in November 2002.
- It is placed on the Montreux Record due to problems caused by siltation and sedimentation which was choking the mouth of the lake; removed from the Record in 2002 following rehabilitation efforts for which the Chilika Development Authority received the Ramsar Wetland Conservation Award for 2002.

Source: Shankar IAS

Q.9) Which of the following is/are associated with “Ramsar Convention”?

1. BirdLife International
2. The International Union for the Conservation of Nature
3. Wetlands International

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Five global non-governmental organizations (NGOs) have been associated with the treaty since its beginnings and were confirmed in the formal status of International Organization Partners (IOPs) of the Convention.

1. BirdLife International (formerly ICBP)
2. IUCN – The International Union for the Conservation of Nature
3. IWMI – The International Water Management Institute
4. Wetlands International (formerly IWRB, the Asian Wetlands Bureau, and Wetlands for the Americas)
5. WWF (World Wide Fund for Nature) International

Source: Shankar IAS

Q.10) The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is administered through?

- a) UNDP
- b) UNEP
- c) GEF
- d) WEF

ANS: B

Explanation: The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement between governments entered into force in 1975, and became the only treaty to ensure that international trade in plants and animals does not threaten their survival in the wild. CITES is administered through the United Nations Environment Programme (UNEP).

Source: Shankar IAS

Environment Impact System and Ecosystem

Q.1) Consider the following statements regarding “Green Deposits”:

- 1. Securities and Exchange Board of India (SEBI) has issued a framework for acceptance of Green Deposits.
- 2. It is an interest-bearing deposit, received by regulated entities (REs) for fixed period and proceeds of which are earmarked for being allocated towards green finance.

Which of the statements given above is/are incorrect?

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

ANS: A

Explanation: Reserve Bank of India (RBI) has issued a framework for acceptance of ‘Green Deposits’.

- Green deposit is an interest-bearing deposit, received by regulated entities (REs) for fixed period and proceeds of which are earmarked for being allocated towards green finance.
- It aims to offer green deposits to customers, protect interest of depositors, to achieve their sustainability agenda, address green-washing concerns and augment the flow of credit to green activities/project.

Source: FORUMIAS

Q.2) Which of the following categories of projects to finance using Sovereign Green Bond (SGBs) proceeds?

- 1. Environment impact assessment
- 2. Terrestrial and Aquatic Biodiversity Conservation
- 3. Clean Transportation

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Government issued FY24’s first tranche of Sovereign Green Bond (SGBs) announced in 2022-23 budget.

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Government has Outlines 9 eligible categories of projects to finance using SGB proceeds.

Eligible categories of projects under framework:

- Renewable Energy
- Energy Efficiency
- Clean Transportation
- Climate Change Adaptation
- Sustainable Water and Waste Management
- Pollution Prevention and Control
- Green Buildings
- Sustainable Management of Living Natural Resources and Land Use
- Terrestrial and Aquatic Biodiversity Conservation

Source: FORUMIAS

Q.3) Which of the following country initiated the Rhino bond to protect black rhinos?

- a) South Africa
- b) Indonesia
- c) Australia
- d) India

ANS: A

Explanation: The World Bank (International Bank for Reconstruction and Development, IBRD) today priced the Wildlife Conservation Bond (WCB) in support of South Africa's efforts to conserve endangered species.

- Also known as the "Rhino Bond," this five-year \$150 million Sustainable Development Bond includes a potential performance payment from the Global Environment Facility (GEF), which will contribute to protecting and increasing black rhino populations in two protected areas in South Africa, the Addo Elephant National Park (AENP) and the Great Fish River Nature Reserve (GFRNR).
- AENP is managed by the South African National Parks (SANParks) and GFRNR is managed by Eastern Cape Parks and Tourism Agency (ECPTA).

Source: <https://www.worldbank.org/en/news/press-release/2022/03/23/wildlife-conservation-bond-boosts-south-africa-s-efforts-to-protect-black-rhinos-and-support-local-communities>

Q.4) Which of the following is/are guiding pillar/s of resource efficiency circular economy industry coalition (RECEIC)?

1. Partnerships for Impact
2. Enhancing Capabilities and Technology Collaborations
3. Investments for Scale

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Recently, RECEIC was launched at the G20 4th Environment and Climate Sustainability Working Group (ECSWG) meeting, held in Mumbai.

RECEIC is structured around the three guiding pillars:

- Partnerships for Impact
- Enhancing Capabilities and Technology Collaborations

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- Investments for Scale

Source: FORUMIAS

Q.5) Consider the following statements:

1. India outperforms US and China in Leadership in Energy and Environmental Design (LEED) net zero certifications.
2. Leadership in Energy and Environmental Design (LEED) India is administered by NITI Aayog.

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

ANS: A

Explanation: India outperforms US and China in Leadership in Energy and Environmental Design (LEED) net zero certifications.

LEED India Programme administered by: Indian Green Building Council (IGBC).

Source: FORUMIAS

Q.6) Consider the following statements regarding “Green Rating for Integrated Habitat Assessment (GRIHA)”:

1. It is developed by Indian Green Building Council (IGBC) and Ministry of New and Renewable Energy.
2. Its validity period is 10 years.

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

ANS: D

Explanation: Green Rating for Integrated Habitat Assessment (GRIHA) is India’s own green building rating system.

- It is jointly developed by The Energy & Resources Institute (TERI) and Ministry of New and Renewable Energy.
- It is a five star rating system. Its rating is valid for a period of 5 years.

Source: FORUMIAS

Q.7) Consider the following statements regarding “Mission on Advanced and High-Impact Research (MAHIR)”:

1. It is launched by Ministry of Power and the Ministry of New and Renewable Energy.
2. Its aim is to leverage Emerging Technologies in the Power Sector.

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

ANS: C

Explanation: The Ministry of Power and the Ministry of New and Renewable Energy have jointly launched the Mission on Advanced and High-Impact Research (MAHIR) to leverage Emerging Technologies in the Power Sector.

Source: FORUMIAS

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Q.8) The Renewable Energy Technology Action Platform (RETCAP) is recently launched by India and?

- a) USA
- b) France
- c) Japan
- d) Australia

ANS: A

Explanation: The RETAP was launched under US-India under Strategic Clean Energy Partnership (SCEP).

- Its aim is to accelerate the development of emerging renewable technologies.
- Focus on green hydrogen, wind energy, and long-duration energy storage, and explore geothermal and tidal energy, etc.

Source: FORUMIAS

Q.9) The "Global Solar Facility (GSF)" is often seen in news associated with?

- a) International Solar Alliance
- b) World Economic Forum
- c) Global Environment Facility
- d) World Bank

ANS: A

Explanation: International Solar Alliance announced that Global Solar Facility (GSF) is set to receive a capital contribution of \$35 million dollars in its 6th Session.

Source: FORUMIAS

Q.10) Which of the following is launched India's 1st Green Hydrogen Fuel Cell bus?

- a) NTPCL
- b) IOCL
- c) BPCL
- d) NPCIL

ANS: B

Explanation: Indian Oil Corporations launched India's 1st Green Hydrogen Fuel Cell bus.

Source: FORUMIAS

Conservation efforts made by Indian Government

Q.1) Consider the following statements with respect to National Centre for Coastal Research (NCCR):

1. It was earlier called as Integrated Coastal and Marine Area Management Programme.
2. It is envisaged to develop and improve the country's capabilities in addressing the challenging problems prevailing in the coastal zone

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

ANS: C

Explanation: In 1997, Government of India implemented Environment Management Capacity Building (EMCB) programme for a period of five years, funded by the International Development Association through

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the World Bank. The Department of Ocean Development (DOD) established a Project Directorate i.e., Integrated Coastal and Marine Area Management (ICMAM-PD), at Chennai in January, 1998 with the approval of Cabinet Committee on Economic Affairs to implement the EMCB programme.

In order to provide a long-term organisational framework to continue research activities, the Project Directorate is designated as the "National Centre for Coastal Research (NCCR)" an attached office of MoES. NCCR, is envisaged to develop and improve the country's capabilities in addressing the challenging problems prevailing in the coastal zone, which have societal, economical and environmental implications. These activities of NCCR would be an integral part of the Ministry's mission to offer scientific and technical support to coastal communities and stakeholders for integrated and sustainable use of resources towards socio-economic benefit of the society.

Source: ForumIAS

Q.2) Consider the following statements about Namdapha National park:

1. It is the largest protected region of the Eastern Himalayan Biodiversity Hotspot.
2. Area wise, Namdapha is the largest national park of India.
3. It is the only national park that is a preferred habitat for Hoolock Gibbons.

Which of the statements given above is/are correct?

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

ANS: B

Explanation: Namdapha National park:

- It is the largest protected region of the Eastern Himalayan Biodiversity Hotspot.
- Area wise, Namdapha is the third largest national park of India.
- The region is famous for its extensive Dipterocarp forests.
- Wolves, Dhols, Mongoose, Asiatic Black Bears, Red Panda, Gaur, Sambar, Takin and many more.
- There is a local tribe called Lisu within the periphery of the park.
- This protected area is India's only national park credited with providing a haven to all the three top types of cat- The snow leopard, the clouded leopard and the Bengal tiger.
- It is the only national park that is a preferred habitat for Hoolock Gibbons.

Source: ForumIAS

Q.3) Consider the following statements about National Green Tribunal (NGT):

1. It was established in 2005 through an act of parliament.
2. Its principal place of sitting is in Pune.

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

ANS: D

Explanation: The National Green Tribunal has been established on 18.10.2010 under the National Green Tribunal Act 2010 for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to

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environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.

It is a specialized body equipped with the necessary expertise to handle environmental disputes involving multi-disciplinary issues. The Tribunal shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.

New Delhi is the Principal Place of Sitting of the Tribunal and Bhopal, Pune, Kolkata and Chennai shall be the other four place of sitting of the Tribunal.

Source: <https://www.greentribunal.gov.in/about-us>

Q.4) Hadgarh Wildlife Sanctuary is located in which of the following State?

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

ANS: D

Explanation: Hadgarh Wildlife Sanctuary lies in the district of Keonjhar and Mayurbhanj. It is near the Hadgarh reservoir of Salandi Dam. This region is rich in mixed deciduous forest and play home to variety of wildlife. The wide range of fauna that can be seen at Hadgarh Wildlife Sanctuary in Odisha, India includes leopard, tiger, fishing cat, jungle cat, langur, pangolin and hyena. Hadgarh Wildlife Sanctuary is also abode of several species of birds and reptiles. The conservation area of Hadgarh Wildlife Sanctuary is very popular with the tourists who wish to relish the wild and un-spoilt natural environment.

Source: ForumIAS

Q.5) The National Energy Conservation Day celebrated on which of the following Day?

- a) December 10
- b) December 11
- c) December 12
- d) December 14

ANS: D

Explanation: The National Energy Conservation Day is being celebrated every year on December 14 since 1991. The Bureau of Energy Efficiency (BEE), under Ministry of Power spearheads the celebrations every year. The objective to celebrate the National Energy Conservation Day is to drive mass awareness about the importance of energy efficiency and conservation.

Source: ForumIAS

Q.6) Consider the following statements about Sariska National Park:

1. Sariska tiger reserve located in Aravali hills
2. It is home to India's largest population of peafowl, and harbours quail
3. The Sariska Wildlife Sanctuary houses the ruins of medieval temples of Garh-Rajor

Which of the following below given codes are correct?

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

ANS: C

Explanation: Sariska Tiger Reserve is well nestled in the Aravali Hills covering 800 sq km area divided into the grasslands, dry deciduous forests, sheer cliffs and rocky landscape. The Sariska National Park is home to

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India's largest population of peafowl, and harbours quail, sand grouse, golden-backed woodpeckers and crested serpent eagles, among other species. Also the Siliserh Lake on the edge of the park has a large number of crocodiles. The Sariska Wildlife Sanctuary houses the ruins of medieval temples of Garh-Rajor that date back to the 10th and 11th centuries. Also a 17th century castle on a hilltop at Kankwari provides a panoramic view of flying vultures and eagles. The Sariska was declared a sanctuary in 1955 and attained the status of a National Park in 1979.

Source: ForumIAS

Q.7) Dampa Tiger reserve located in which of the following State?

- a) Sikkim
- b) Meghalaya
- c) Mizoram
- d) Assam

ANS: C

Explanation: The Dampa Tiger Reserve occupies an area of 500 sq. km. and lies in west Mizoram in northeastern India, along the border between India and Bangladesh. The hills and forests in this 'Land of the highlanders' are considered by biologists to be "bio-geographic highways" connecting India to Malayan and Chinese regions. The rich, luxuriant rainforests of Dampa harbour several species such as the swamp deer, tiger, leopard, elephant and hoolock gibbon. The Dampa Tiger Reserve is probably one of the last few safe havens for the tiger and a host of other animal and bird species. Low altitude galliformes are visible and the three species of Chloropsis found in India are endemic to these fabulous forests.

Source: ForumIAS

Q.8) In which year the Government of India enacted the Disaster Management Act, which envisaged the creation of National Disaster Management Authority (NDMA)?

- a) 2001
- b) 2003
- c) 2005
- d) 2007

ANS: C

Explanation: Emergence of an organization is always through an evolutionary process. NDMA has also gone through the same stages. The Government of India (GOI), in recognition of the importance of Disaster Management as a national priority, set up a High-Powered Committee (HPC) in August 1999 and a National Committee after the Gujarat earthquake, for making recommendations on the preparation of Disaster Management plans and suggesting effective mitigation mechanisms. The Tenth Five-Year Plan document also had, for the first time, a detailed chapter on Disaster Management. The Twelfth Finance Commission was also mandated to review the financial arrangements for Disaster Management. On 23 December 2005, the Government of India enacted the Disaster Management Act, which envisaged the creation of National Disaster Management Authority (NDMA), headed by the Prime Minister, and State Disaster Management Authorities (SDMAs) headed by respective Chief Ministers, to spearhead and implement a holistic and integrated approach to Disaster Management in India.

Source: ForumIAS

Q.9) The term “Protected Area” is commonly used to describe areas of Ecological and Biological importance. Which of the following given are protected areas?

1. Wildlife sanctuaries
2. National parks
3. Zoos
4. Game reserves

Select the correct answer using the codes given below:

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

ANS: D

Explanation: The term Protected Areas is commonly used to describe areas of Ecological and Biological importance like Wildlife Sanctuaries, National Parks, Zoos, Game reserves etc. An area qualifies to be declared as Protected Area when it bears some floral or faunal species of great significance, which needs to be conserved or has an ecological system, which is fragile and needs to be protected. Most countries all over the world have taken elaborate measures to identify areas of Ecological & Biological significance and declare them as protected. It is in such area that most of the rich Biological Diversity of the world exists. India, being situated in the tropical region harbors a rich Bio-Diversity. With just 2% of the world’s land area, India supports about 10% of the world’s Biological Diversity making it the seventh richest Bio-Diversity country in the world. This distinction bestows a great responsibility on the Govt. to protect and conserve its rich Floral, Faunal & Ecological Diversity. This is sought to be done by establishing a network of Sanctuaries and National Parks, which encompass areas of Ecological and Biological importance.

Source: ForumIAS

Q.10) Consider the following statements with respect to Project Tiger:

1. The Government of India has taken a pioneering initiative for conserving its national animal, the tiger, by launching the ‘Project Tiger’ in 1973.
2. Project Tiger is an ongoing Centrally Sector Scheme of the Ministry of Environment, Forests and Climate Change providing central assistance to the tiger States for tiger conservation in designated tiger reserves.

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

ANS: A

Explanation: The Government of India has taken a pioneering initiative for conserving its national animal, the tiger, by launching the ‘Project Tiger’ in 1973. The tiger reserves are constituted on a core/buffer strategy. The core areas have the legal status of a national park or a sanctuary, whereas the buffer or peripheral areas are a mix of forest and non-forest land, managed as a multiple use area. The Project Tiger aims to foster an exclusive tiger agenda in the core areas of tiger reserves, with an inclusive people oriented agenda in the buffer. Project Tiger is an ongoing Centrally Sponsored Scheme of the Ministry of Environment, Forests and Climate Change providing central assistance to the tiger States for tiger conservation in designated tiger reserves. The National Tiger Conservation Authority (NTCA) is a statutory body of the Ministry, with an overarching supervisory / coordination role, performing functions as provided in the Wildlife (Protection) Act, 1972.

Source: ForumIAS

Revision

Q.1) The term 'Extended Producer Responsibility' is most often used in the context of:

- a) Intellectual Property Rights.
- b) Collection and channelization of e-waste.
- c) Tribal rights in terms of minor forest produce.
- d) Obligation of mining companies to safeguard the welfare of its workers.

ANS: B

Explanation: Extended Producer Responsibility

- 'Extended Producer Responsibility' is a concept under which producers will be responsible for collection and channelization of e-waste generated from the 'end of life' of their products to registered dismantler or recycler.
- It is defined under e-waste (Management and Handling) Rules, 2016 as notified by the Ministry of Environment & Forests.

Source: ForumIAS

Q.2) Consider the following statements with respect to the Green Climate Fund (GCF):

1. The GCF is a fund within the framework of the UNEP.
2. Its objective is to raise Climate Finance of \$100 billion a year by 2020.
3. It is managed by NABARD and SIDBI in India.

Which of the above given statements is/are correct?

- a) Only 1
- b) 1 and 3
- c) 2 and 3
- d) All

ANS: C

Explanation: Green Climate Fund

- The GCF is a fund within the framework of the UNFCCC (United Nations Framework Convention on Climate Change) to assist developing countries in adaptation and mitigation practices to counter climate change.
- It was formally established by a UNFCCC decision in Durban, South Africa in December 2011.
- It was intended to be the centre piece of efforts to raise Climate Finance of \$100 billion a year by 2020.
- NABARD and SIDBI have been accredited by the GCF as direct access entities. NABARD is the first entity from India to be accredited as Direct Access Entity (DAE).

Source: ForumIAS

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Q.3) Consider the following statements with respect to the Forest Conservation Act, 1980:

1. Act extends to the whole of India.
2. Act provides for the conservation of forests.
3. Act restricts State Government concerning use of forest land for non-forest purposes.

Which of the above given statements is/are correct?

- a) Only 1
- b) 1 and 2
- c) Only 3
- d) 2 and 3

ANS: D

Explanation: Forest Conservation Act 1980

- Forest Conservation Act was passed in 1980 to provide for the conservation of forests and for matters connected therewith.
- Act extends in whole of India except the State of Jammu & Kashmir.
- Salient Features of the Act
 - It was aimed with a view to check further deforestation, which ultimately results in ecological imbalances, accordingly the provisions made therewith must apply to all forest irrespective of the nature of ownership for classification thereof
 - The act places restrictions on the power of the State Government concerning preservation of forests or use of forest land for non-forest purposes.
 - The Act provides for the constitution of advisory committee to advise the Government with regard to the grant of approved by the Central Government or any other matter connected with conservation of forests which may be referred to it by the Central Government.

Source: ForumIAS

Q.4) Which one of the following magazine is published by Birdlife International?

- a) World Bird Watch
- b) Birding world
- c) Birders world
- d) Wild bird

ANS: A

Explanation: Birdlife International

- Birdlife International is a global partnership of conservation organizations that strives to conserve birds, their habitats and global biodiversity. It is world's largest conservation partnerships for conservation of birds and their habitats. It was earlier known as International Committee for Bird Preservation.
- It publishes a quarterly magazine, World Birdwatch, which contains recent news and authoritative articles about birds, their habitats, and their conservation around the world.
- It is the official Red List authority for birds, for the International Union for Conservation of Nature.

Source: ForumIAS

Q.5) Solar Radiation Management is used as a geo-engineering technique to combat climate change. Which of the following are its components?

1. Placing Aluminum mirrors in space.
2. White painting roofs and roads.
3. Firing sulphur dioxide into atmosphere.
4. Ocean fertilization.

Select correct answers using the codes given below:

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

ANS: C

Explanation: Geo Engineering Technique

Theoretically, there are two major types of interventions - Carbon Sequestration and solar radiation management.

- Solar Radiation Management techniques include firing sulphur dioxide into atmosphere, putting huge mirrors in the space, creating pale colored rooftop and other structures which have high albedo.
- Ocean fertilization is adding iron or nitrogen to the ocean to promote carbon sequestration by phyto planktons.
- Geo engineering is large-scale intervention in the Earth's climatic system with the aim of limiting climate change.

Source: ForumIAS

Q.6) Consider the following statements:

1. The Montreal Protocol is an international environmental treaty to phase out the Ozone Depleting Substances (ODSs).
2. Kigali agreement is an amendment to Montreal Protocol.
3. India has not ratified the Kigali Agreement.

Which of the above given statements is/are correct?

- a) Only 2
- b) 1 and 2
- c) 2 and 3
- d) All

ANS: B

Explanation: Kigali Agreement

- The Montreal Protocol is a most effective international environmental treaty to phase out the Ozone Depleting Substances (ODSs) from the atmosphere. It came into force in 1989. It has 197 member parties to the protocol and become a first international treaty with complete ratification.
- It has successfully curbed the 98% production of chlorofluorocarbons and other ODSs and significantly contributed to the repair of the ozone hole.
- Kigali Agreement: It has undergone several amendments and Kigali amendment is the eighth amendment to this protocol. In the 28th meeting of the Parties to the Montreal Protocol, negotiators from 197 nations have signed a historic agreement to amend the Montreal Protocol in Kigali, a capital city of a tiny African country, Rwanda on 15th October 2016.

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- As per the agreement, these countries are expected to reduce the manufacture and use of Hydrofluorocarbons (HFCs) by roughly 80-85% from their respective baselines, till 2045.
- This phase down is expected to arrest the global average temperature rise up to 0.5 degree Celsius by 2100.
- India joins the nations of the world in lauding the Hydrofluorocarbon (HFC) Amendment to the Montreal Protocol, agreed to at the 28th Meeting of Parties at Kigali, Rwanda. The Kigali Amendment to the Montreal Protocol is legally binding and will come into force from January 1, 2019.
- The Kigali Agreement upholds the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR & RC).

Source: ForumIAS

Q.7) Johannesburg Declaration, 2002 was in reference to which of the following?

- a) Disaster management cooperation among UN member nations.
- b) Climate change directives for the developed world.
- c) Sustainable development agenda for UN countries.
- d) Cooperation on energy efficient grids among African nations.

ANS: C

Explanation: Johannesburg Declaration

- The Johannesburg Declaration on Sustainable Development was adopted at the World Summit on Sustainable Development (WSSD), referred to as Earth Summit 2002. In the summit the Plan of Implementation of the World Summit on Sustainable Development was also agreed.
- The Johannesburg Declaration builds on earlier declarations made at the United Nations Conference on the Human Environment at Stockholm in 1972, and the Earth Summit 1992 in Rio de Janeiro.

Source: ForumIAS

Q.8) World Day to Combat Desertification and Drought is observed on June 17th every year. Consider the following statements with reference to it:

1. Its objective is to promote public awareness to combat desertification.
2. This year's theme was Global Land, Global Home, Global Future.
3. Agenda for Sustainable development Goal 15 emphasizes the need to halt and reverse land degradation.

Which of the above given statements is/are correct?

- a) Only 1
- b) Only 3
- c) 1 and 3
- d) 2 and 3

ANS: B

Explanation: Combat Desertification and Drought

- World Day to Combat Desertification and Drought Observed every year on 17 June.
- Its aim is to promote public awareness of international efforts to combat desertification.
- Theme for 2017 was: "Our Land. Our Home. Our Future." Focus was on relation between land degradation and migration.
- The 2030 Agenda for Sustainable Development especially the Goal 15 emphasizes the need to halt and reverse land degradation.

Source: ForumIAS

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Q.9) Consider the following statements regarding United Nations Environmental Programme (UNEP):

1. It was founded as a result of the Stockholm conference in 1972.
2. It assists developing countries in implementing environmentally sound policies and practices.
3. It is headquartered at Geneva, Switzerland.

Which of the above statements are correct?

- a) 1 and 2
- b) 1 and 3
- c) 2 and 3
- d) All

ANS: A

Explanation: UNEP

- The United Nations Environment Programme (UNEP) is an agency of United Nations and coordinates its environmental activities by assisting developing countries in implementing environmentally sound policies and practices.
- It was founded as a result of the United Nations Conference on the Human Environment (Stockholm Conference) in June 1972.
- It's headquartered at Nairobi, Kenya.
- UNEP work encompasses.
 - Assessing global, regional and national environmental conditions and trend.
 - Developing international and national environmental instruments.
 - Strengthening institutions for the wise management of the environment.
 - Facilitating the transfer of knowledge and technology for sustainable development.

Source: ForumIAS

Q.10) The "Brundtland Report" from the United Nations World Commission on Environment and Development refers to:

- a) Safeguards to reduce the movements of hazardous waste between nations.
- b) A comprehensive blueprint of action to be taken in every area in which humans affect the environment.
- c) Characterization of the concept of sustainable development and debates whether to prioritize development or the environment.
- d) Climate change policy that endorsed the principle of common but differentiated responsibilities.

ANS: C

Explanation: Brundtland Report

- The concept of 'sustainable development' was crystallized in the 1987 report of the United Nations World Commission on Environment and Development called as the Brundtland Commission.
- The Brundtland Commission's characterization of 'sustainable development' is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Source: ForumIAS

Environmental Pollution

Q.1) Which of the following technology/technologies is/are used at the stage of pre - combustion of thermal power plants?

1. Coal washing
2. Blending
3. Flue-gas desulfurization

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Environmental emission standards for controlling SO₂, NO_x & Mercury emissions from coal-based Thermal Power Plants (TPPs) first introduced in 2015 by MoEFCC.

Pollution Control Technologies (PCTs) at pre - combustion stage is coal washing and blending.

Source: FORUMIAS

Q.2) Consider the following statements:

1. Environmental emission standards for coal-based Thermal Power Plants (TPPs) were introduced in 2015 under the Air (Prevention and Control of Pollution) Act of 1981.
2. Coal beneficiation is a process through which combustion attribute of the coal is enhanced by separating the inorganic impurities from raw coal.

Which of the statements given above is/are incorrect?

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

ANS: A

Explanation: Environmental emission standards for controlling SO₂, NO_x & Mercury emissions from coal-based Thermal Power Plants (TPPs) first introduced in 2015 by MoEFCC, under the Environment (Protection) Act, 1986.

Coal beneficiation: Process through which combustion attribute of the coal is enhanced by separating the inorganic impurities (volatile matter or ash) from raw coal.

Source: FORUMIAS

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Q.3) Consider the following statements regarding “Graded Response Action Plan”:

1. It is an emergency response mechanism based on Delhi's Air Quality Index level.
2. It was prepared in pursuant to the Supreme Court's order of 2016 in the matter of M. C. Mehta vs Union of India.

Which of the statements given above is/are incorrect?

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

ANS: D

Explanation: Graded Response Action Plan is an emergency response mechanism based on Delhi's Air Quality Index level.

- Prepared in pursuant to the Supreme Court's order of 2016 in the matter of M. C. Mehta vs Union of India regarding air quality in the National Capital Region of Delhi.
- First notified under Environment (Protection) Act of 1986 in January 2017 by the MoEFCC.

Source: FORUMIAS

Q.4) Which of the following pollutant/s is/are part of National Air Quality Index (NAQI)?

1. Ozone
2. SO₂
3. Lead

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: National Air Quality Index (NAQI) is released by Central Pollution Control Board (CPCB). It includes 8 pollutants-PM₁₀, PM_{2.5}, NO₂, Ozone, SO₂, CO, NH₃ and lead (Pb).

Source: FORUMIAS

Q.5) Consider the following statements regarding “Central Pollution Control Board (CPCB)”:

1. It was established in 1992.
2. It is a statutory organization created under the Water (Prevention and Control of Pollution) Act, 1974.

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

ANS: B

Explanation: Central Pollution Control Board (CPCB) is a statutory organization constituted under the Water (Prevention and Control of Pollution) Act, 1974.

Later, was entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981.

Source: FORUMIAS

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Q.6) Consider the following statements regarding “National Air Quality Monitoring Programme (NAMP)”:

1. It is a nation-wide programme of ambient air quality monitoring administered by Central Pollution Control Board (CPCB).
2. Mercury is not part of regular monitoring of National Air Quality Monitoring Programme (NAMP).

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

ANS: C

Explanation: National Air Quality Monitoring Programme (NAMP): It is a nation-wide programme of ambient air quality monitoring administered by CPCB.

Under NAMP, 4 air pollutants identified for regular monitoring at all the locations: Sulphur Dioxide (SO₂), Oxides of Nitrogen as NO₂, Respirable Suspended Particulate Matter (RSPM / PM₁₀) and Fine Particulate Matter (PM_{2.5}).

Source: FORUMIAS

Q.7) The “PRANA portal” is often seen in news related to?

- a) National Clean Air Programme (NCAP)
- b) National Air Quality Monitoring Programme (NAMP)
- c) National Air Quality Index
- d) Commission for Air Quality Management (CAQM)

ANS: A

Explanation: Portal for Regulation of Air-pollution in Non-Attainment cities (PRANA) portal for monitoring of the implementation of the National Clean Air Programme (NCAP) in 131 cities & disseminating information on air quality to the public.

Source: FORUMIAS

Q.8) Which of the following is/are cause/s of pollution in India?

1. Uncontrolled growth in human population
2. Rapid industrialization
3. Uncontrolled exploitation of nature

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Pollution is defined as ‘an addition or excessive addition of certain materials to the physical environment (water, air and lands), making it less fit or unfit for life’.

Causes of pollution:

- Uncontrolled growth in human population
- Rapid industrialization
- Urbanization

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- Uncontrolled exploitation of nature.
- Forest fires, radioactivity, volcanic eruptions, strong winds etc.

Source: FORUMIAS

Q.9) Which of the following is/are characteristic/s of carbon monoxide?

1. Colorless gas
2. Odorless gas
3. It can slow our reflexes and make us confused and sleepy.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Carbon monoxide (CO) is a colourless, odourless gas that is produced by the incomplete burning of carbon-based fuels including petrol, diesel, and wood.

It lowers the amount of oxygen that enters our blood. It can slow our reflexes and make us confused and sleepy.

Source: Shankar IAS

Q.10) Ozone can be produced through burning which of the following?

1. Petrol
2. Diesel
3. Coal

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Ozone: It occurs naturally in the upper layers of the atmosphere.

- This important gas shields the earth from the harmful ultraviolet rays of the sun.
- It causes smog and acid rain. It is produced from burning fuels including petrol, diesel, and coal.

Source: FORUMIAS

Environmental Pollution – II

Q.1) Which of the following pollutant/s is/are released due to stubble burning?

1. Carbon monoxide
2. Methane
3. Volatile Organic Compounds

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Stubble burning emits toxic pollutants in the atmosphere containing harmful gases like Carbon

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Monoxide (CO), methane (CH₄), carcinogenic polycyclic aromatic hydrocarbons, volatile organic compounds (VOC).

Source: <https://www.business-standard.com/about/what-is-stubble-burning>

Q.2) Which of the following chemical/s is/are used in cloud seeding?

1. Dry Ice
2. Silver Iodide
3. Sodium Chloride

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Cloud Seeding: It is a weather modification technique to enhance precipitation by dispersing substances into the air that help to saturate the clouds.

Chemicals used: Salts such as silver iodide (AgI), potassium iodide, sodium chloride, or dry ice (solid carbon dioxide).

Source: FORUMIAS

Q.3) Which of the following city (million plus population) ranks first in “Swachh Vayu Sarvekshan 2023 (Clean Air Survey) awards”?

- a) Visakhapatnam
- b) Indore
- c) Mysore
- d) Kozhikode

ANS: B

Explanation: Swachh Vayu Sarvekshan is an initiative by the MoEFCC under the National Clean Air Programme (NCAP).

- NCAP launched by MoEFCC as a comprehensive initiative in partnership with various Ministries and States to improve air quality at city, regional and national level.
- Indore (Madhya Pradesh) ranked first in 1st category (million plus population) in 2023.

Source: FORUMIAS

Q.4) Consider the following statements regarding “ground water scenario in India”:

1. India is second world’s largest user of ground water after china.
2. Water level in more than 60% of wells monitored by Central Ground Water Board (CGWB) registered a declining trend in the last one decade.

Which of the statements given above is/are incorrect?

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

ANS: A

Explanation: GW scenario in India: World’s largest user of groundwater, exceeding the use of the United States and China combined.

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Water level in more than 60% of wells monitored by CGWB registered a declining trend in the last one decade.

Source: FORUMIAS

Q.5) Consider the following statements regarding “central water commission (CWC)”:

1. It is a premier Technical Organization of India in the field of Water Resources.
2. It is functioning as an attached office of the NITI Aayog.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: CWC: It is a premier Technical Organization of India in the field of Water Resources. It is presently functioning as an attached office of the Ministry of Jal Shakti.

Source: FORUMIAS

Q.6) Which of the following organization released the “2023 Plastic Overshoot Day Report”?

- a) World Economic Forum
- b) Global Environment Facility
- c) Centre for Science and Environment
- d) Earth Action

ANS: D

Explanation: The 2023 Plastic Overshoot Day Report was released by Swiss-based research consultancy Earth Action (EA).

Plastic Overshoot Day refers to the day when the amount of plastic waste surpasses the capability of waste management systems to effectively manage.

Source: FORUMIAS

Q.7) The “Glolitter project” was initiated by which of the following?

1. Norway
2. IMO
3. FAO

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Glolitter: Project between the Government of Norway, IMO, and FAO aiming to reduce sea-based marine plastic litter.

Source: FORUMIAS

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Q.8) Consider the following statements regarding “UN Convention to Combat Desertification (UNCCD)”:

1. It is only legally binding framework set up to address desertification and effects of drought.
2. European Union is member of UNCCD.

Which of the statements given above is/are incorrect?

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

ANS: D

Explanation: UN Convention to Combat Desertification: It is only legally binding framework set up to address desertification and effects of drought.

Members: 197 Parties to Convention (196 country including India and European Union).

Source: FORUMIAS

Q.9) The “Sand and Dust Storms (SDS) report” is recently seen in news released by?

- a) WEF
- b) WMO
- c) UNEP
- d) FAO

ANS: D

Explanation: A report titled ‘Sand and Dust Storms (SDS): A Guide to Mitigation, Adaptation, Policy, and Risk Management Measures in Agriculture’ was released by Food and Agriculture Organization (FAO).

Source: <https://www.fao.org/documents/card/en?details=cc8071en>

Q.10) The famous “Champions of the Earth Award” is announced by?

- a) UNEP
- b) WEF
- c) GEF
- d) UNDP

ANS: A

Explanation: United Nations Environment Programme (UNEP) announced 2023 Champions of the Earth Award.

Champions of the Earth award honor individuals, groups, and organizations whose actions have transformative impact on environment.

Source: FORUMIAS

International Environmental Conventions

Q.1) Consider the following statements regarding “International Day of Zero Waste (IDZW)”:

1. It is observed annually on March 5.
2. It is facilitated by the UN Environment Programme (UNEP) and the UN Human Settlements Programme (UN-Habitat).

Which of the statements given above is/are incorrect?

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

ANS: A

Explanation: For the first time, IDZW has been observed to encourage everyone to prevent and minimize waste and promotes a societal shift towards a circular economy (CE).

- 30th March is announced as IDZW by United Nations General Assembly (UNGA) in 2022.
- It is jointly facilitated by the UN Environment Programme (UNEP) and the UN Human Settlements Programme (UN-Habitat).

Source: FORUMIAS

Q.2) Which of the following element is controlled by Minamata Convention?

- a) Cadmium
- b) Lead
- c) Mercury
- d) Nitrate

ANS: C

Explanation: Minamata Convention on Mercury is adopted in 2013 at Geneva, came into force in 2017. It is 1st global legally binding treaty to protect human health and environment from adverse effects of mercury.

Source: FORUMIAS

Q.3) Which of the following is/are objective/s of “UN Global Framework on Chemicals”?

1. Prevention of illegal trade and trafficking of chemicals and waste.
2. Phase out highly hazardous pesticides in agriculture by 2025.
3. Setting up policies and regulations aimed at reducing chemical pollution by 2030 and promoting alternative.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The objectives of Global Framework on Chemicals:

- Prevention of illegal trade and trafficking of chemicals and waste.
- Phase out highly hazardous pesticides in agriculture by 2025.
- Setting up policies and regulations aimed at reducing chemical pollution by 2030 and promoting alternative.

Source: FORUMIAS

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Q.4) The “Waigani Convention” is recently seen in news related to?

- a) Radioactive wastes
- b) Organic pollutants
- c) Agro wastes
- d) Space debris

ANS: A

Explanation: Waigani Convention, 1995: Convention to ban the Importation of Hazardous and Radioactive Wastes into Forum Island Countries and to Control the Transboundary Movement and Management of Hazardous Waste within the South Pacific Region.

Source: FORUMIAS

Q.5) The “Incident and Trafficking Database” is recently seen in news associated with?

- a) IAEA
- b) IUCN
- c) CITES
- d) UNEP

ANS: A

Explanation: Latest data from IAEA’s Incident and Trafficking Database (ITDB) found that radioactive contamination is increasingly found in scraps for recycling as per International Atomic Energy Agency (IAEA) study.

Source: FORUMIAS

Q.6) Consider the following statements regarding “Kunming-Montreal Global Biodiversity Framework (KMGBF)”:

1. It was adopted in 2022 at COP 15 to the UN Convention on Biological Diversity.
2. It is legally binding framework on member countries.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: Kunming-Montreal Global Biodiversity Framework (KMGBF) was adopted in 2022 at COP 15 (held in Montreal) to the UN Convention on Biological Diversity.

- It replaced the Aichi Biodiversity Targets that expired in 2020.
- It is not legally binding.

Source: FORUMIAS

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Q.7) Which of the following is/are global environment facility agency/agencies?

1. World Bank
2. FAO
3. Conservation International

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: GEF agencies create project proposals and then manage these projects on the ground.

- In so doing, they help eligible governments and non-governmental organizations (NGOs) to develop, implement, and execute their projects.
- Often, the agencies work together on GEF projects, pooling expertise. Not only does this allow a more holistic approach to programming, it also reinforces the individual agency's efforts to mainstream or incorporate global environment concerns into its internal policies, programs, and projects.

Eighteen institutions act as GEF agencies: ADB, FAO, IFAD, World Bank, EBRD and Conservation International etc.

Source: <https://www.thegef.org/partners/gef-agencies>

Q.8) The “Inclusive Conservation Initiative (ICI)” is related to?

- a) UNEP
- b) UNDP
- c) Conservation International
- d) FAO

ANS: C

Explanation: Inclusive Conservation Initiative (ICI) is endorsed in 2022 by Conservation International.

It aims to support ILPC to secure and enhance their stewardship over landscapes, seascapes and territories with high biodiversity and irreplaceable ecosystems.

Source: FORUMIAS

Q.9) The “Tucuxi freshwater dolphin” found in which of the following country?

- a) Brazil
- b) Indonesia
- c) India
- d) Sri Lanka

ANS: A

Explanation: Tucuxi freshwater dolphin species that lives in Amazon River system in Brazil, Colombia, Ecuador and Peru.

Source: FORUMIAS

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Q.10) The “Belem Declaration” is recently seen in news related to?

- a) Participation of indigenous people
- b) Primary health
- c) Solar energy
- d) Agriculture reforms

ANS: A

Explanation: Member countries of Amazon Cooperation Treaty Organization (ACTO) signed the Belém Declaration in the Brazilian city of Belém.

- ACTO is an intergovernmental socio-environmental block formed by signing of the Amazon Cooperation Treaty.
- Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela are its members.
- Belém Declaration calls for ensuring the participation of Indigenous Peoples in decision-making.

Source: FORUMIAS

International Environmental Conventions – II

Q.1) Consider the following statements regarding “Vaquita Porpoise whales”:

- 1. International Whaling Commission (IWC) issued first extinction alert for the Vaquita Porpoise whales.
- 2. These are found only in northern Gulf of California.

Which of the statements given above is/are incorrect?

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

ANS: D

Explanation: IWC issued its first ‘extinction alert’ for the Vaquita Porpoise whales. These whales are Critically Endangered and found only in northern Gulf of California.

Source: FORUMIAS

Q.2) Consider the following statements regarding “International Whaling Commission (IWC)”:

- 1. It is an inter-governmental organization under the International Convention for the Regulation of Whaling.
- 2. India is not a member of IWC.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: IWC: Set up as an inter-governmental organization under the International Convention for the Regulation of Whaling (1946).

It has 88 member countries including India.

Source: FORUMIAS

Prelims Marathon Compilation April 2024

Q.3) Which of the following state/s is/are have five or more elephant reserves?

1. Tamil Nadu
2. Kerala
3. Assam

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Elephant reserves in India: Declared as an administrative category by the government to demarcate large landscapes that hold elephants and their movements.

- 33 elephant reserves in India (cover a total area of nearly 80,000 sq km).
- Highest number of ERs: Tamil Nadu and Assam (5 each) followed by Kerala (4) and Odisha (3).

Source: FORUMIAS

Q.4) Which of the following state has highest number of elephant corridors?

- a) Assam
- b) Tamil Nadu
- c) Kerala
- d) West Bengal

ANS: D

Explanation: Elephant Corridors of India: West Bengal has the highest number of elephant corridors.

Source: FORUMIAS

Q.5) Which of the following statements is/are correct about "Indian elephant (*Elephas maximus indicus*)"?

1. It is socially active animal.
2. It has the ability to feel grief and compassion.
3. It has the longest gestation period of all mammals.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Indian elephant (*Elephas maximus indicus*) characteristics:

- Highly intelligent animals characterized by strong family bonds with sophisticated forms of communication.
- Complex behavior, including the ability to feel grief and compassion.
- Form herds of related females led by the oldest female, the 'matriarch'.
- Have the longest gestation period of all mammals (18 to 22 months).
- Adult male Asian elephants are less social than females.

Source: FORUMIAS

Prelims Marathon Compilation April 2024

Q.6) Consider the following statements regarding elephant protection measures:

1. AI - based sensor system Gajraj will be deployed to prevent elephant deaths in rail accidents.
2. Elephant Census is carried out at every five-year interval.

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

ANS: C

Explanation: Measures to protect elephants: AI -based sensor system “Gajraj” will be deployed to prevent elephant deaths in rail accidents.

- Census is carried out at every five-year interval.
- Planting of native species of trees in Assam.
- Species include Amla, Bel, Gamhari, Jamun, Bhumura, Arjun etc.

Source: FORUMIAS

Q.7) Which of the following rhinos is/are found in Asia region?

1. Indian rhino
2. Black rhino
3. White rhino

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: A

Explanation: 5 species of rhino found on the earth:

- 3 found in Asia: Sumatran rhino, Javan rhino and Great one horned rhino (Indian rhino).
- 2 found in Africa: White rhino and Black rhino.

Source: FORUMIAS

Q.8) Consider the following statements regarding “Intergovernmental Science-policy platform on Biodiversity and Ecosystem Services (IPBES)”:

1. It is an independent intergovernmental body.
2. United Nations Environment Programme (UNEP) provides secretariat services to IPBES.

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

ANS: C

Explanation: About Intergovernmental Science-policy platform on Biodiversity and Ecosystem Services (IPBES): It is an independent intergovernmental body.

- Committed to strengthening the science-policy interface for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development.
- United Nations Environment Programme (UNEP) provides secretariat services to IPBES.

Source: FORUMIAS

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Q.9) The “Ludwigia peruviana” is recently seen in news related to?

- a) Invasive weed
- b) Mangrove species
- c) Drought resistant plant
- d) Water plant

ANS: A

Explanation: Ludwigia peruviana is an invasive weed, threatening elephant habitats and foraging grounds in Tamil Nadu.

Infested the majority of the hill station’s swamps, locally known as vayals.

Source: FORUMIAS

Q.10) The Kamlang Tiger Reserve is recently seen in news located at?

- a) Assam
- b) Arunachal Pradesh
- c) Nagaland
- d) Tripura

ANS: B

Explanation: Kamlang is located in the southeastern part of Lohit District in Arunachal Pradesh near the border with Myanmar.

Source: FORUMIAS

National Institutions and Environmental organization and National Missions on Environment

Q.1) The “Lemru elephant reserves (LER)” is recently seen in news related to?

- a) Karnataka
- b) Rajasthan
- c) Chhattisgarh
- d) Tamil Nadu

ANS: C

Explanation: Request of the Chhattisgarh state to de-notify coal mines falling under the Lemru Elephant Corridor has been accepted by Ministry of Coal.

- LER was established to prevent human-animal conflict with elephants moving into Chhattisgarh from Odisha and Jharkhand.
- Lemru Elephant Reserve is part of the Hasdeo Aranya forests (rich in coal deposits) and is known as lungs of Chhattisgarh.

Source: FORUMIAS

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Q.2) The “Debrigarh Wildlife Sanctuary” is often seen in news located at?

- a) Odisha
- b) Andhra Pradesh
- c) Haryana
- d) Uttar Pradesh

ANS: A

Explanation: Debrigarh, a wildlife sanctuary in Odisha’s Bargarh district, has been made completely free from any human settlement following one of the country’s largest ‘peaceful’ relocations of forest-dwellers.

- As many as 400 families have moved out their villages after a series of consultations.
- In a State where permanent human settlements are common even within wildlife sanctuaries, Debrigarh now stands out as an exception alongside Nalabana Bird Sanctuary in Chilika Lake.

Source: FORUMIAS

Q.3) Consider the following statements regarding “Kalakad Mundanthurai Tiger Reserve (KMTR)”:

1. It forms part of the Agasthyamalai Biosphere Reserve.
2. It was established for conservation of Lion Tailed Macaque.

Which of the statements given above is/are incorrect?

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

ANS: D

Explanation: Kalakad TR or Kalakad Mundanthurai TR (KMTR): Forms part of the interstate (Kerala and TN) Agasthyamalai Biosphere Reserve.

- It was established primarily for conservation of Lion Tailed Macaque.
- River Thamirabarani and 13 other rivers originate from KMTR, popularizing it as River Sanctuary.

Source: FORUMIAS

Q.4) Consider the following statements regarding “Eco-Sensitive Zone (ESZ)”:

1. As per National Wildlife Action Plan land within 10 km of boundaries of national parks and wildlife sanctuaries are to be notified as ESZ.
2. National Wildlife Action Plan (2002- 2016) provides for establishing ESZ under the Environmental (Protection) Act, 1986.

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

ANS: C

Explanation: Eco-Sensitive Zones (ESZ) are created as “shock absorbers” for the protected areas.

- National Wildlife Action Plan (2002- 2016) provides for establishing ESZ under the Environmental (Protection) Act, 1986.
- As per National Wildlife Action Plan (2002-2016), land within 10 km of boundaries of national parks and wildlife sanctuaries are to be notified as ESZ.
- In 2022, the Supreme Court mandated that a minimum 1-km ESZ around national parks or wildlife sanctuaries should be there.

Source: FORUMIAS

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Q.5) Consider the following statements regarding “Dachigam National Park (DNP)”:

1. It is located at Zabarwan mountain ranges of the Himalayas.
2. It occupies almost half of the catchment zone of the Dal Lake.

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

ANS: C

Explanation: Dachigam National Park (DNP) is located in Jammu and Kashmir (Zabarwan mountain ranges of the Himalayas).

- It occupies almost half of the catchment zone of the Dal Lake.
- Dachigam nallah coming from Marshar Lake flows through it.

Source: FORUMIAS

Q.6) Recently India held a “Country-Led Initiative (CLI)” event related to which of the following?

- a) UNDP
- b) UNEP
- c) UNFF
- d) UNIDO

ANS: C

Explanation: The UNFF Country-Led-Initiative (CLI) by the Government of India in support of the UN Forum on Forests was held successfully in Dehradun, India from 26 to 28 October.

- The meeting brought together over 80 experts from 40 countries and 20 international organisations.
- The CLI was inaugurated by the H.E. Shri Subodh Uniyal, Minister of Environment, Forest and Climate Change, Labour and Employment of India, Director Generals of Forests, Ministry of Environment, Forest and Climate Change of India and the Director of UNFFS.

Source: <https://www.un.org/esa/forests/news/2023/10/india-cli-2023/index.html>

Q.7) Consider the following statements regarding “United Nation Forum on Forests (UNFF)”:

1. UNEP in 2000 established UNFF as a subsidiary body.
2. All Member States of United Nations and specialized agencies are members of UNFF.

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

ANS: B

Explanation: United Nation Forum on Forests (UNFF): Economic and Social Council of the United Nations (ECOSOC) in 2000 established UNFF as a subsidiary body.

- It promotes the management, conservation and sustainable development of all types of forests and to strengthen long-term political commitment to this end.
- Members: All Member States of United Nations (including India which is a founding member) and specialized agencies.

Source: FORUMIAS

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Q.8) In which of the following place/s is/are a coral reef found in India?

1. Gulf of Mannar
2. Gulf of Kutch
3. Andaman & Nicobar Islands

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Coral reefs are marine invertebrate animals with hard exoskeletons made of calcium carbonate. Made up of colonies of hundreds to thousands of tiny individual corals, called polyps. 45 countries have 75% of world's coral reefs.

Presence in India: Gulf of Kutch, Gulf of Mannar, Andaman & Nicobar, and Lakshadweep Islands.

Source: FORUMIAS

Q.9) The "Bhoj Wetland" is often seen in news related to?

- a) Maharashtra
- b) Madhya Pradesh
- c) Jharkhand
- d) Chhattisgarh

ANS: B

Explanation: Bhoj Wetland consists of two contiguous human-made reservoirs, the upper and lower lakes located in the city of Bhopal, Madhya Pradesh.

- The Upper Lake is called Bhojtal (Bada Talaab) and Lower Lake is known as Chhota Talaab. The lakes are very rich in biodiversity, particularly for macrophytes, phytoplankton and zooplankton.
- It has more than 15 kinds of fishes and several vulnerable species including turtles, amphibians and aquatic invertebrates. It is designated as the Ramsar site in 2002.

Source: FORUMIAS

Q.10) The "Deepor Beel" wetland is often seen in news located at?

- a) Assam
- b) Arunachal Pradesh
- c) Nagaland
- d) Tripura

ANS: A

Explanation: Assam government has expressed intent to allow water sports and tourism-related activities in Deepor Beel.

- It is a permanent freshwater lake and largest Beel (lake) in Brahmaputra valley of Lower Assam.
- It is a wildlife sanctuary, Ramsar site and Important Bird Area site (declared by an NGO Birdlife International).

Source: FORUMIAS

National Institutions and Environmental organization and National Missions on Environment – II

Q.1) Consider the following statements regarding “Kolleru Lake”:

1. It is the largest freshwater lake in India.
2. It is fed by Godavari and Krishna rivers.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: Kolleru Lake, Andhra Pradesh: It is largest freshwater lake in India.

- It is connected to Krishna and Godavari systems.
- It is fed by seasonal Budameru and Tammileru rivers.

Source: FORUMIAS

Q.2) The “Operation Kachchhap” is recently seen in news related to?

- a) Elephants
- b) Turtles
- c) Rhinos
- d) Great Indian Bustards

ANS: B

Explanation: Directorate of Revenue Intelligence (DRI) saved 955 live babies of Gangetic turtles in a crackdown on illegal wildlife trade in multicity Operation “Kachchhap”.

India is one of the world's hotspots for turtle diversity, representing 29 species of tortoises and freshwater turtles.

Source: FORUMIAS

Q.3) The term “Cryptobiosis” is often seen in news related to?

- a) Permafrost
- b) Agriculture
- c) Liquid oils
- d) Cancer treatment

ANS: A

Explanation: Scientists brought microscopic worms back to life after they were frozen in the Siberian permafrost for 46,000 years by entering in to state called cryptobiosis.

Cryptobiosis is the state of an organism when it shows no visible signs of life and when its metabolic activity becomes hardly measurable or comes reversibly to a standstill.

Source: FORUMIAS

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Q.4) According to the First Census of Water bodies, which of the following state/s is/are top three states having water bodies?

1. Tamil Nadu
2. Karnataka
3. Andhra Pradesh

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: A

Explanation: Ministry of Jal Shakti released All India report of the first census of Water Bodies. According to the census, top 3 states with most water bodies: West Bengal, Uttar Pradesh, Andhra Pradesh.

Source: FORUMIAS

Q.5) The programme “MISHTI” is often seen in news related to which of the following?

- a) Wetlands
- b) Mangroves
- c) Corals
- d) Estuaries

ANS: B

Explanation: Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI) was launched on the World Environment Day (5th June 2023).

Its aim is to “Restoration of mangrove forests” by undertaking mangrove reforestation/ afforestation measures along India’s coast by adopting existing best practices in India and globally.

Source: FORUMIAS

Q.6) The “Rejuvenating Watersheds for Agricultural Resilience through Innovative Development (REWARD) programme” is recently seen in news assisted by?

- a) ADB
- b) AIIB
- c) World Bank
- d) GEF

ANS: C

Explanation: Rejuvenating Watersheds for Agricultural Resilience through Innovative Development (REWARD) programme: It is a World Bank assisted Watershed development program which is being implemented from 2021 to 2026.

Objective: Strengthen capacities of National and State institutions to adopt improved watershed management in selected watersheds of participating States.

Source: FORUMIAS

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Q.7) The “Hydrogen for Heritage scheme” is recently seen in news related to?

- a) Railways
- b) Roadways
- c) Waterways
- d) Airways

ANS: A

Explanation: India (Budget 2023 – 2024) proposed to invite global firms to manufacture Hydrogen trains for implementing the Hydrogen for heritage scheme.

Source: FORUMIAS

Q.8) Consider the following statements regarding “Flex Fuel Vehicles”:

- 1. It has an internal combustion engine that can run on more than one type of fuel.
- 2. It provides more mileage compared to traditional gasoline.

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

ANS: A

Explanation: FFV: Has internal combustion engine that can run on more than one type of fuel, or even a mixture of fuels such as petrol and ethanol.

- For example: E85 which has 85% ethanol fuel and 15% gasoline or other hydrocarbon by volume.
- Benefits: Lower harmful pollutant emission like Carbon monoxide, sulphur, etc., reduced import dependence on crude oil.
- Drawbacks: Lower mileage compared to traditional gasoline, use of water-intensive crops such as sugarcane for production of ethanol, etc.

Source: FORUMIAS

Q.9) Which of the following is/are agency/agencies came together to establish the Energy Efficiency Services Limited (EESL)?

- 1. NTPC Limited
- 2. Power Finance Corporation Limited
- 3. POWERGRID Corporation of India Limited

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Energy Efficiency Services Limited (EESL): It is a joint venture of 4 Public Sector Undertakings- NTPC Limited, Power Finance Corporation Limited, REC Limited and POWERGRID Corporation of India Limited.

Source: FORUMIAS

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Q.10) Which of the following programme/s is/are implemented by “Energy Efficiency Services Limited (EESL)”?

1. Unnat Jyoti by Affordable LEDs for All (UJALA)
2. Street Lighting National Programme
3. Smart Meter National Programme

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Flagship Programs of EESL:

- Unnat Jyoti by Affordable LEDs for All (UJALA)
- Street Lighting National Programme
- Smart Meter National Programme
- Buildings Energy Efficiency Programme etc.

Source: FORUMIAS

Revision

Q.1) Which of the following organization released the “Energy Transition Index (ETI), 2023”?

- a) WEF
- b) GEF
- c) UNEP
- d) International Solar Alliance

ANS: A

Explanation: World Economic Forum (WEF), in collaboration with Accenture, released the report titled “Fostering Effective Energy Transition 2023” and Energy Transition Index (ETI).

Source: FORUMIAS

Q.2) Consider the following statements regarding “organic farming in India”:

1. India has the highest number of organic farmers in the world.
2. Tripura became the world’s first 100% organic state.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: Status of Organic Farming in India: Highest number of Organic farmers in the world 44.3 Lakhs (Economic Survey 2022-23) with 59.1 Lakh Ha under Organic cultivation

Sikkim became the world’s first 100% organic state.

Source: FORUMIAS

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Q.3) The “Jaivik Bharat logo” is recently seen in news related to?

- a) Organic farming
- b) Shifting cultivation
- c) Primary health
- d) Renewable energy

ANS: A

Explanation: The Food Safety and Standards Authority of India (FSSAI) have introduced the Jaivik Bharat logo to communicate the adherence to the National organic standards (Both PSG and NPOP).

Source: FORUMIAS

Q.4) Which of the following product/s is/are launched under brand name of “Bharat Organics”?

- 1. Basmati Rice
- 2. Sugar
- 3. Sonamasoori Rice

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Organic food products of National Cooperative Organics Ltd (NCOL) were launched under brand name ‘Bharat Organics’.

Six organic products were launched under the ‘Bharat Organics’ brand - tur dal, chana dal, sugar, rajma, basmati rice, and Sonamasoori rice.

Source: FORUMIAS

Q.5) Which of the following is/are pillar/s of “Zero Budget Natural Farming”?

- 1. Bijamrita
- 2. Mulching
- 3. Micro irrigation

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation:



Source: FORUMIAS

Q.6) Which of the following species is/are promoted for agro forestry by the Indian Council of Forestry Research and Education (ICFRE)?

1. Eucalyptus
2. Teak
3. Mahagony

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Recently, the Centre released a fact sheet to promote agro-forestry prepared by the Indian Council of Forestry Research and Education (ICFRE).

- Released details of cultivating 36 specific species, including bamboo, that are suitable for agro-forestry systems and home gardens.
- The 36 species include *Leucaena leucocephala*, or subabul, and various varieties of eucalyptus.
- Subabul is considered an invasive species that has been reported as a weed in more than 20 countries, according to an International Union for Conservation of Nature (IUCN) database.
- Eucalyptus is considered highly water-intensive. The list also includes important timber species such as poplar, teak, shisham (Indian rosewood) and mahogany.

Source: FORUMIAS

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Q.7) Consider the following statements regarding “Electronic Soil (e-Soil)”:

1. It is a low-power bio-electronic growth substrate, tailored for hydroponic cultivation.
2. It can electrically stimulate the root system and growth environment of plants.

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

ANS: C

Explanation: Researchers develop 'electronic soil', a low-power bio-electronic growth substrate, tailored for hydroponic cultivation.

E-Soil can electrically stimulate the root system and growth environment of plants.

Source: FORUMIAS

Q.8) Which of the following country launched the “Global Bio-fuels Alliance (GBA)”?

- a) France
- b) Spain
- c) India
- d) Singapore

ANS: C

Explanation: Global Bio-fuels Alliance (GBA) is a multi-stake holder alliance of Governments, International Organizations and Industries, an initiative by India as the G20 Chair, bringing together the biggest consumers and producers of bio-fuels to drive development and deployment of bio-fuels.

The initiative aims to position bio-fuels as a key to energy transition and contribute to jobs and economic growth.

Source: FORUMIAS

Q.9) Which of the following country hosted the “14th Clean Energy Ministerial (CEM)”?

- a) India
- b) UAE
- c) Israel
- d) France

ANS: A

Explanation: India hosted 14th Clean Energy Ministerial (CEM14) and 8th Mission Innovation (MI-8) meeting under the theme "Advancing Clean Energy Together".

It is a high-level global forum (India is a member) to advance clean energy technology to encourage transition to a global clean energy economy.

Source: FORUMIAS

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Q.10) Which of the following prohibits the use of all weapons of mass destruction causing destruction of environment?

- a) Geneva convention
- b) Brundtland report
- c) Stockholm Conference
- d) Rio conference

ANS: C

Explanation: Key Initiatives launched to minimize environmental impact of war:

- Geneva Convention (1949): Imposes restrictions on warfare methods aiming to cause widespread, longterm, and severe damage to the natural environment.
- Brundtland Report (1987): The report "Our Common Future" introduced the concept of sustainable development.
- Stockholm Conference (1972): Prohibits the use of all weapons of mass destruction.

Source: FORUMIAS

Science

Q.1) Consider the following statements regarding "Geostationary orbit":

1. The satellite placed in geostationary orbit remains in the same position relative to the Earth.
2. It helps in direct broadcast as well as communications or relay systems.

Which of the statements given above is/are incorrect?

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

ANS: D

Explanation: Geostationary orbit is a type of geosynchronous orbit but satellite rotates in the same direction as the rotation of the Earth and has an approximate 24- hour period (lie on the same plane as the equator).

- The satellite placed in geostationary orbit remains in the same position relative to the Earth.
- Application: Direct broadcast as well as communications or relay systems.

Source: FORUMIAS

Q.2) Which of the following type of isotope of carbon found abundantly?

- a) Carbon 12
- b) Carbon 13
- c) Carbon 14
- d) Carbon 15

ANS: A

Explanation: Carbon dating is a widely-used method to establish the age of dead organic materials.

- Isotopes - Carbon occurs naturally in 3 isotopes: carbon 12, carbon 13 and carbon 14.
- The most abundant isotope of carbon in the atmosphere is C-12.

Source: FORUMIAS

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Q.3) Consider the following statements regarding “carbon dating”:

1. Carbon 14 isotope is used in carbon dating.
2. It can be used to determine the age of non-living things like rocks.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: Carbon dating - Living things have carbon in them in various forms. Plants and animals get their carbon from the atmosphere.

- When they die, C-14 decay and the ratio of C-12 and C-14 changes.
- The changing ratio of C-12 to C-14 in the remains of a plant or animal after it dies is measured to deduce its approximate age.
- Exceptions to carbon dating - It cannot be used to determine the age of non-living things like rocks, for example.

Source: FORUMIAS

Q.4) Which of the following is/are dating method/s?

1. Radiometric
2. Potassium – argon
3. Cosmogenic nuclide

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Different types of dating methods:

- Radiometric dating methods which involve elements with half-lives of billions of years are used to determine age of very old objects.
- Potassium-argon dating - The radioactive isotope of potassium decays into argon, and their ratios can give a clue about the age of rocks.
- Uranium-thorium-lead dating - Uranium and thorium have several radioactive isotopes, and all of them decay into the stable lead atom.

Cosmogenic nuclide dating (CRN) - It is applied to study the age of ice cores in Polar Regions.

Source: FORUMIAS

Q.5) The term “vapes” is recently seen in news related to?

- a) Micro – organisms
- b) E – cigarettes
- c) Hydrogen fuel
- d) Organic farming

ANS: B

Explanation: Electronic Nicotine Delivery Systems-ENDS (e-cigarettes) are 95% less harmful than tobacco cigarettes claimed by a study is a myth.

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- Vaping consists of inhaling the vapour of a heated liquid inside e-cigarettes.
- Since 2019, the production, manufacture, import and export, transport, sale, distribution, storage and advertisement of vapes have been banned in India.

Source: FORUMIAS

Q.6) The term “Clethodim” is often seen in news related to?

- a) Fungicide
- b) Herbicide
- c) Bio – fertilizer
- d) Weed

ANS: B

Explanation: New study raises concerns on use of common herbicide Clethodim, which is posing a silent threat to male reproductive health.

Clethodim is used as a selective post emergence herbicide for the control of annual and perennial grasses in numerous crops.

Source: FORUMIAS

Q.7) The term “electroporation” is often seen in news related to?

- a) Cancer treatment
- b) Fuel cells
- c) Bio – fuels
- d) Solar equipment manufacturing

ANS: A

Explanation: Recently a patient suffering from non-alcoholic steatohepatitis associated with renal cancer has been treated with nanoknife technology.

Also known as electroporation, nanoknife is a surgical procedure developed to help treat certain cancerous tumors, including cancer of the prostate using pulses of electricity.

Source: FORUMIAS

Q.8) In which of the following city, recently inaugurated first 3D-printed post office?

- a) Hyderabad
- b) Delhi
- c) Mumbai
- d) Bangalore

ANS: D

Explanation: Recently India inaugurated its first 3D-printed post office in Bangalore.

- Additive Manufacturing (AM) – It is the industrial production name for 3D printing.
- It is an additive process, in which layers of a material like plastic, composites or bio-materials are built up to construct objects that range in shape, size, rigidity and colour.
- It differs from the traditional subtractive manufacturing techniques involving cutting large blocks of material to form the desired object.

Source: FORUMIAS

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Q.9) The term “Namoh 108” is often seen in news related to?

- a) Rice variety
- b) Mustard variety
- c) Lotus variety
- d) Rose variety

ANS: C

Explanation: Science Minister unveiled a variety of lotus called “Namoh 108”.

- The lotus has 108 petals and was discovered several years ago in Manipur
- This is the only lotus variety in India to have had its genome sequenced.

Source: FORUMIAS

Q.10) The “Langlands program” is recently seen in news related to?

- a) Mathematics
- b) Physics
- c) Chemistry
- d) Biology

ANS: A

Explanation: Langlands program, the world’s biggest Math project provides a beautifully intricate set of connections between various areas of mathematics, pointing the way toward novel solutions for old problems.

It is a mathematical exercise to find connections between two far-flung areas of mathematics - number theory and harmonic analysis, launched in 1967.

Source: FORUMIAS

Science - II

Q.1) Which of the following city is the India’s first solar city?

- a) Sanchi
- b) Amaravathi
- c) Puri
- d) Hampi

ANS: A

Explanation: Sanchi, the historic home of the Stupa, has become India's first 'solar city'.

- Features - The 5,572 solar panels spread over an area of 4.98 hectares ensure supply from 9 am to 4 pm.
- It currently includes a 3 MW solar plant that caters to the city's energy needs.
- A 5 MW plant for agricultural requirements is also under construction.
- Another similar facility in Gulgaon village, which will house a 5 MW solar facility equipped with 11,722 solar panels is about to come up.
- Madhya Pradesh has also initiated the construction of a 600 MW electricity-producing solar plant on the dam water in Omkareshwar.
- Once completed, Sanchi will become energy surplus.

Source: FORUMIAS

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Q.2) Consider the following statements regarding “Solar City Programme”:

1. It comes under the ministry of environment.
2. There is separate fund allocation to implement the programme.

Which of the statements given above is/are incorrect?

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

ANS: C

Explanation: Solar City Programme: A total of 24 states and union territories have identified cities to be developed as solar cities.

- It comes under the Ministry of New and Renewable Energy (MNRE). Each State /Union Territory shall select at-least one city under this.
- There is no separate fund allocation as funds available under the different existing schemes can be utilized for development of solar cities.

Source: FORUMIAS

Q.3) Consider the following statements regarding “Tantalum”:

1. Recently researchers of from the Indian Institute of Technology (IIT), Ropar has detected the presence of tantalum in the Sutlej river sand in Punjab.
2. It is very hard, ductile, lustrous, bluish-grey transition metal that is highly corrosion resistant.

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

ANS: C

Explanation: Researchers from the Indian Institute of Technology (IIT), Ropar has detected the presence of tantalum, a rare metal, in the Sutlej river sand in Punjab.

- Tantalum – A chemical element with symbol Ta and atomic number 73 in the periodic table. It is very hard, ductile, lustrous, bluish-grey transition metal that is highly corrosion resistant.
- It has a melting point of 5,463 °F (2,996 °C), the 4th highest of all metals. It is one of the 12 critical and strategic minerals according to the annual report of the Union Ministry of Mines for 2020-21.

Source: FORUMIAS

Q.4) Recently South East Asia's first Night Sky Sanctuary will be setup in?

- a) Ladakh
- b) Tawang
- c) Namdapha
- d) Kalahasthi

ANS: A

Explanation: South East Asia's 1st Night Sky Sanctuary will be setup in Ladakh with the help of Indian Institute of Astrophysics, Bengaluru.

It will be located within the Changthang Wildlife Sanctuary and adjacent to the Indian Astronomical Observatory (2nd-highest optical telescope in the world).

Source: FORUMIAS

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Q.5) The term “Sparsh Bharati” is often seen in news related to?

- a) Bharati script
- b) Indian Braille
- c) Vernacular books
- d) Single window kiosk

ANS: B

Explanation: After introducing the Bharati script V. Srinivasa Chakravarthy, a professor in IIT Madras has developed a script for persons with visual impairment named as Sparsh Bharati.

- This ‘Indian Braille’ can be used across Indian languages. Bharati is a simple and unified script which can be used to write most major Indian languages.
- It is designed using simple shapes, borrowing simple characters from various Indian languages and English.

Source: FORUMIAS

Q.6) Which of the following is/are “Piezoelectric materials”?

- 1. Quartz
- 2. Ceramics
- 3. Tendons

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Piezoelectricity was discovered in 1880 by Pierre and Paul-Jacques Curie.

- It is a phenomenon in which certain materials generate an electric charge in response to mechanical stress.
- Piezoelectric materials include quartz, ceramics, lead, zirconate, titanate and biological substances like bone and tendons.

Source: FORUMIAS

Q.7) Which of the following state is proposed to launch India's first-ever gyrocopter safari?

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

ANS: B

Explanation: Uttarakhand is all set to launch India's first-ever gyrocopter safari by the year's end to redefine the concept of adventure tourism in the state.

It is a type of rotorcraft, uses a rotor that is not powered to generate lift. The rotor looks similar to that of a helicopter, but it requires air flowing upwards across it to rotate.

Source: FORUMIAS

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Q.8) The term “Ketamine” is often seen in news related to?

- Anesthetic drug
- Cancer drug
- Corona vaccine
- Arthritis drug

ANS: A

Explanation: Ketamine is an illegal recreational anaesthetic drug that has been listed as a hallucinogen by the US Drug Enforcement Administration.

- It is used to treat mental health treatments like depression and Post-Traumatic Stress Disorder (PTSD).
- India – It included the drug in the stringent Schedule X of the Drug and Cosmetics act, 1940.

Source: FORUMIAS

Q.9) Consider the following statements regarding “Polar Science and Cryosphere Research (PACER)”:

- It is a central sector umbrella scheme.
- It is implemented by Ministry of Earth Sciences through National Centre for Polar and Ocean Research, Goa.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

ANS: C

Explanation: PACER: It is a Central Sector umbrella scheme.

- It is implemented by – Ministry of Earth Sciences (MoES) through National Centre for Polar and Ocean Research (NCPOR), Goa.
- Its objective is to promote long-term scientific programmes in the polar region and the surrounding oceans.
- To implement annual expeditions and to maintain Indian research bases at Antarctica, Arctic and Himalaya.

Source: FORUMIAS

Q.10) Consider the following statements regarding “United Earth Amazonia prize”:

- It is a "Green Nobel" prize that recognizes environmental work in the Amazon rainforest.
- It was instituted by Marcus Nobel.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

ANS: C

Explanation: The United Earth Amazonia prize is a "Green Nobel" prize that recognizes environmental work in the Amazon rainforest.

The prize was instituted by Marcus Nobel, a Swedish-American businessman based in Portland, Oregon.

Source: FORUMIAS

Science – III

Q.1) The term “Phage Therapy” is recently seen in news related to?

- a) Bacterial infections
- b) Cancer treatment
- c) Bio – fertilizers
- d) Fungicides

ANS: A

Explanation: Recently, study found that the public accepts use of bacteria-killing viruses (Phage Therapy) as an alternative to antibiotics.

Phage Therapy involves using Bacteriophages to treat bacterial infections. Bacteriophages are viruses that infect and replicate only in bacterial cells.

Source: FORUMIAS

Q.2) Consider the following statements regarding “Net Energy Gain (NEG)”:

- 1. It implies nuclear fusion process generate more energy than the nuclear fusion process consumes.
- 2. India is a part of the International Thermonuclear Experimental Reactor (ITER) project to demonstrate NEG from the fusion reactors.

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

ANS: C

Explanation: NEG implies nuclear fusion process generate more energy than the nuclear fusion process consumes.

India is a part of the International Thermonuclear Experimental Reactor (ITER) project to demonstrate NEG from the fusion reactors.

Source: FORUMIAS

Q.3) Consider the following statements regarding “uranium enrichment”:

- 1. Weapon-grade uranium is commonly considered to have been enriched above 90 percent U-235.
- 2. Highly enriched uranium (HEU) is anything enriched above 20 percent U-235.

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

ANS: C

Explanation: Weapon-grade uranium is commonly considered to have been enriched above 90% U-235.

- Uranium enrichment is a process to create an effective nuclear fuel out of mined uranium by increasing the percentage of uranium-235 (U-235).
- Uranium found in nature contains only 0.7% of the chain-reacting isotope U-235. Naturally, 99.27% of Uranium exists in form of U-238 while rest in other isotopes as: U-235 (0.72%), and U-234 (0.006%) etc.

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- Most nuclear reactors that produce electricity only require fuel that is enriched to between 3-5% U-235. Highly enriched uranium (HEU) is anything enriched above 20% U-235.

Source: FORUMIAS

Q.4) The “Advanced Liquid Processing System” is recently seen in news related to?

- a) Purification of radionuclide's
- b) Cryogenic technology
- c) Crude oil purification
- d) Ground water enrichment

ANS: A

Explanation: Contaminated Water stored at the Fukushima Daiichi Nuclear Power Station (FDNPS) has been released after treating through an Advanced Liquid Processing System (ALPS).

- ALPS are a pumping and filtration system which uses a series of chemical reactions to remove radionuclides from the contaminated water.
- Prior to being treated by ALPS system, contaminated water had caesium and strontium (account for most of the radioactivity from the contaminated water), removed periodically.

Source: FORUMIAS

Q.5) Which of the following is/are advantage/s of “Direct Methanol Fuel Cells (DMFC’s)”?

1. High energy density
2. High efficiency
3. High operating temperatures

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: DMFC is an electrochemical energy conversion device that directly converts liquid methanol's chemical energy into electrical energy.

- DMFCs have a high energy density, high efficiency and low operating temperature and are safer to operate as they deal with liquid fuel (methanol).
- It generates cleaner energy and can utilize all by-products (except the CO₂) of the reaction.

Source: FORUMIAS

Q.6) Which of the following is/are lanthanide elements?

1. Neodymium
2. Promethium
3. Cadmium

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: 15 lanthanide elements are: lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium.

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Source: FORUMIAS

Q.7) In which of the following application/s is/are rare earth elements used?

1. Computers
2. Cell phones
3. Electric vehicles

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Applications of Rare Earth Elements: High end technology, defense applications, electronic devices like cell-phones, computers, clean energy, electric vehicle etc. because of their luminescent and catalytic properties.

Source: FORUMIAS

Q.8) Which of the following country is the largest exporter of “vanadium”?

- a) Chile
- b) Argentina
- c) Brazil
- d) Congo

ANS: C

Explanation: Brazil is the world’s largest exporter of vanadium (one-fourth of total exports), Followed by Russia and South Africa.

Source: FORUMIAS

Q.9) Which of the following is/are characteristic/s of lab grown diamonds?

1. No dirt or impurities ingrained in it.
2. Created with little to no environmental damage.
3. They mostly came from conflict areas.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: LGD’s: Artificially manufactured diamonds through crystallization of pure carbon with the same physical and chemical properties as natural diamonds.

Natural diamonds can come from conflicted regions.

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Natural
DIAMONDS



Lab Grown
DIAMONDS

Mining has very high carbon emissions - about 57,000 grams of CO₂ per carat.



Lab grown diamonds have a zero to negligible carbon footprint. In some instances, carbon is captured and used in diamond production.

Diamond mining has approximately 2400kg of mineral waste per carat.



Lab grown diamonds have zero waste and do not displace land, disrupt wildlife or pollute ground water.

Water Usage:
557 litres per carat.



Water Usage:
82 litres per carat.

Mined diamonds are a rare and naturally beautiful stone. They are highly desirable and so can be incredibly expensive.



Typically the price of a like for like Lab Grown Diamond is upto 50% less.

With natural diamonds, assuming a budget, there's potentially a trade off between clarity and colour for carat.



The quality of a lab grown diamond is identical to a natural mined diamond, the only compromise is provenance.

Source: FORUMIAS

Q.10) The “BepiColombo spacecraft” is recently seen in news to study which of the following planet?

- a) Mercury
- b) Jupiter
- c) Mars
- d) Saturn

ANS: A

Explanation: BepiColombo spacecraft was launched in 2018 to study and understand the composition, geophysics, atmosphere, magnetosphere and history of Mercury, the least explored planet in the inner Solar System.

Source: FORUMIAS

Science – IV

Q.1) Which of the following is/are building blocks of Metaverse?

1. Infrastructure layer
2. Virtualization engine layer
3. Interface and Access layer

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Metaverse is a 3-D-enabled virtual reality space.

Building Blocks of Metaverse (4 layers):

- Infrastructure layer, enables devices, connects them to the network, and delivers content.
- Virtualization engine layer provides the computational and programming platform.
- Interface and Access layer help users in accessing the Metaverse.
- User experience and use cases layer, creation, sale, trading, storage, etc.

Source: FORUMIAS

Q.2) The term “bharos” is recently seen in news related to?

- a) Mobile operating system
- b) Bio – fertilizers
- c) Solar vents
- d) Pace makers

ANS: A

Explanation: The “bharos” is a made in India mobile operating system developed by IIT Madras.

- It is developed under project funded by the Department of Science and Technology (DST).
- It comes with No Default Apps (NDA).
- This means that users are not forced to use apps that they may not be familiar with or that they may not trust.

Source: FORUMIAS

Q.3) Which of the following tech company/companies is/are called as gatekeeper/s by European Union?

1. Apple
2. Meta
3. Infosys

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: 6 Big Tech companies namely Apple, Amazon, Alphabet, ByteDance, Meta, and Microsoft were named as Gatekeepers by the EU.

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Gatekeepers are the companies to face the highest level of scrutiny under the Digital Markets Act (DMA) of the EU.

Source: FORUMIAS

Q.4) Consider the following statements regarding “Maya Operating System (OS)”:

1. Ministry of defense is replacing its windows system with Maya OS.
2. It is based on an open-source platform Ubuntu.

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

ANS: C

Explanation: Amid increasing cyber and malware attacks on defense as well as critical infrastructure, Ministry of Defense to replace Windows OS with Maya OS.

New OS is based on an open-source platform Ubuntu.

Source: FORUMIAS

Q.5) Which of the following space agency/agencies is/are developed the James Webb Space Telescope?

1. NASA
2. ISRO
3. JAXA

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: A

Explanation: James Webb Space Telescope launched in 2021 is a joint project of NASA, the European Space Agency (ESA) and the Canadian Space Agency.

Source: FORUMIAS

Q.6) The term “Hubble constant” is recently seen in news related to?

- a) Nano technology
- b) Universe expansion
- c) Survival of fittest
- d) Genome project

ANS: B

Explanation: In 1929, Edwin Hubble provided first mathematical description of universe’s expansion. It is referred as the Hubble constant.

Source: FORUMIAS

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Q.7) Which of the following is/are source/sources of Neutrinos?

1. Supernovas
2. Banana fruit
3. Exploding stars

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Sources of Neutrinos: When cosmic rays collide with interstellar matter.

- Produced by stars like the Sun, exploding stars, supernovas, etc.
- On Earth, neutrinos are produced when unstable atoms decay. Even a banana emits neutrinos—due to natural radioactivity of the potassium.

Source: FORUMIAS

Q.8) The “Iron Calorimeter (ICAL) detector” is recently seen in news related to?

- a) Neutrino
- b) Proton
- c) Electron
- d) Neutron

ANS: A

Explanation: ICAL should be able to study the spectra of muons from the atmospheric neutrinos and establish this "trough and peak" effect, thereby determining the oscillation parameters to good accuracy. Also, since ICAL can distinguish neutrino events from anti-neutrino events (by detecting muons of negative or positive sign in the detector, from a charge-current interaction), it can also study Earth-matter effects. This will enable it to study certain oscillation parameters which are not well-known.

Source: <https://www.imsc.res.in/~ino/Physics/physics.html#C3>

Q.9) Which of the following is/are Jovian planets?

1. Jupiter
2. Mars
3. Saturn

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Jupiter: Fifth from the Sun and largest planet in the solar system.

- One of the Jovian planets (others are Saturn, Uranus and Neptune).
- Jovian Planets do not have solid surfaces; instead, it is composed primarily of hydrogen and helium, with traces of methane, ammonia, water, and other gases in their atmospheres.

Source: FORUMIAS

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Q.10) The “OSIRIS-REx mission” is often seen in news launched by?

- a) NASA
- b) JAXA
- c) ISRO
- d) European Space Agency

ANS: A

Explanation: NASA’s OSIRIS-REx mission brought the sample from carbon-rich asteroid Bennu back to Earth. OSIRIS-REx is an acronym for: Origins, Spectral Interpretation, Resource Identification, and Security - Regolith Explorer.

Source: FORUMIAS

Awareness in Field of IT & Space - I

Q.1) Consider the following statements regarding “Polar Satellite Launch Vehicle (PSLV)”:

- 1. It is first Indian launch vehicle to be equipped with liquid stages.
- 2. It was successfully launched two spacecraft such as Chandrayaan-1 in 2008 and Mars Orbiter Spacecraft in 2013.

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

ANS: C

Explanation: Polar Satellite Launch Vehicle (PSLV): 3rd generation launch vehicle and first Indian launch vehicle to be equipped with liquid stages.

- PSLV emerged as the reliable and versatile workhorse launch vehicle of India.
- It successfully launched two spacecraft such as Chandrayaan-1 in 2008 and Mars Orbiter Spacecraft in 2013.
- 3 variations in PSLV - PSLV-G (General), PSLV-XL variants and PSLV-CA (Core Alone).
- It has 4 stages in its operation to provide thrust in launching spacecraft to different orbits.

Source: FORUMIAS

Q.2) Consider the following statements regarding “Geosynchronous Satellite Launch Vehicle (GSLV)”:

- 1. It is a four stage vehicle.
- 2. It can carry 5000kg load to Geosynchronous Transfer Orbit (GTO).

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

ANS: D

Explanation: Geosynchronous Satellite Launch Vehicle (GSLV): 4th generation launch vehicle, a 3-stage vehicle with 4 liquid strap-on boosters.

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- Stage I: It uses solid rocket motor with 4 liquid strap-ons.
- Stage II: It uses liquid rocket engine (similar to vikas engine of PSLV stage II).
- Stage III: It uses India's first cryogenic engine (CE-7.5) in the upper stage. It enabled the launching of 2000 kg of communication satellites.

Capacity - 5000 kg of pay load to Low Earth Orbits (LEO) and 2500 kg of payload to Geosynchronous Transfer Orbit (GTO), primarily INSAT class communication satellites.

Source: FORUMIAS

Q.3) Consider the following statements regarding "Sounding Rockets":

1. They are one or two stage solid propellant rockets used for probing the upper atmospheric regions and for space research.
2. ISRO started launching indigenously made sounding rockets from 1992.

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

ANS: A

Explanation: Sounding rockets are one or two stage solid propellant rockets used for probing the upper atmospheric regions and for space research.

- They serve as platforms to test or prove prototypes of new components or subsystems intended for use in launch vehicles and satellites.
- It is possible to conduct coordinated campaigns by simultaneously launching sounding rockets from different locations in a single day.
- ISRO started launching indigenously made sounding rockets from 1965.
- In 1975, ISRO consolidated all its sounding rocket activities under the Rohini Sounding Rocket (RSR) Programme.

Source: FORUMIAS

Q.4) Which of the following is/are navigation satellite system?

1. GAGAN
2. NAVIC
3. CARTOSAT

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Navigation Satellites are used to meet the emerging demand of positioning, navigation and timing and also civil aviation requirements.

Examples of navigation satellites are GAGAN and IRNSS (NAVIC).

Source: FORUMIAS

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Q.5) Consider the following statements regarding “propellants”:

1. Solid propellant consist of a casing filled with a mixture of solid compounds which burn at a rapid rate, expelling hot gases from a nozzle to produce thrust.
2. Liquid propellant consists of fuel and oxidizers are stored in separate tanks, and are fed to a combustion chamber where they are combined and burned to produce thrust.

Which of the statements given above is/are incorrect?

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

ANS: D

Explanation: Solid Propellant: They consist of a casing filled with a mixture of solid compounds (fuel and oxidizer) which burn at a rapid rate, expelling hot gases from a nozzle to produce thrust.

- Liquid Propellant: The fuel and oxidizer are stored in separate tanks (liquid form), and are fed to a combustion chamber where they are combined and burned to produce thrust.
- Cryogenic propellants are liquefied gases stored at very low temperatures. Examples are - Liquid hydrogen (LH₂) as fuel and liquid oxygen (LO₂ or LOX) as oxidizer.

Source: FORUMIAS

Q.6) The famous “Vikas engine” is used in which of the following launch vehicle/s?

1. PSLV
2. GSLV
3. GSLV Mk-III

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: The Vikas is a liquid fueled rocket engine built by ISRO. The engine uses up about 40 metric tons of Unsymmetrical dimethylhydrazine (UDMH) as fuel and Nitrogen tetroxide (N₂O₄) as oxidizer with a maximum thrust of 725 kN.

It was developed by Nambi Narayanan and his team during the 1970s. It is similar to Viking rocket engines.

The Vikas Engine is the workhorse liquid rocket engine powering:

- The second stage of India’s Polar Satellite Launch Vehicle (PSLV),
- The second stage and the four strap on stages of Geosynchronous Launch Vehicle (GSLV) and
- The twin engine core liquid stage (L110) of GSLV Mk-III.

Source: FORUMIAS

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Q.7) The term “INCOSPAR” is related to which of the following?

- a) ISRO
- b) NPCIL
- c) BARC
- d) NGT

ANS: A

Explanation: Indian Space Research Organisation (ISRO) is the space agency of India.

- Role- Involved in science and engineering to harvest the benefits of outer space for India and the mankind.
- Formation - On August 15, 1969 and superseded Indian National Committee for Space Research (INCOSPAR), set up in 1962 by Dr. Vikram Sarabhai with an expanded role to harness space technology.
- Department of Space (DoS) was set up and ISRO was brought under DoS in 1972.

Source: FORUMIAS

Q.8) Consider the following statements regarding “Open Network for Digital Commerce (ONDC)”:

1. It is a network based on open protocol and will enable local commerce across segments to be engaged by any network-enabled application.
2. It aims to increase e-commerce penetration in the country by enabling inclusion of all types and sizes of sellers.

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

ANS: C

Explanation: ONDC – It is a network based on open protocol and will enable local commerce across segments (mobility, grocery, food order, hotel booking, etc.) to be engaged by any network-enabled application.

- Its aim is to dramatically increase e-commerce penetration in the country by enabling inclusion of all types and sizes of sellers.
- ONDC goes beyond the current platform-centric digital commerce model where the buyer and seller have to use the same platform or application to be digitally visible and do a business transaction.
- Initiative of - It is an initiative of Department for Promotion of Industry and Internal Trade (DPIIT) under the Ministry of Commerce and Industry.

Source: FORUMIAS

Q.9) The term “Akira” is recently seen in news related to?

- a) Ransomware
- b) Sounding rocket
- c) Ballistic missile
- d) Radar system

ANS: A

Explanation: Recently the central government’s Computer Emergency Response Team (CERT-In) issued an advisory flagging the emergence of a new ransomware called Akira.

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- It is a kind of malware, software used to gain unauthorized access to systems to steal data.
- Akira targets computer systems that run on Windows and Linux operating systems and is known to spread laterally across networks.

Source: FORUMIAS

Q.10) Consider the following statements regarding WTO “Information Technology (IT) Agreement”:

1. It came into force from 1997.
2. India is not a signatory.

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

ANS: A

Explanation: The WTO’s IT Agreement has done little for India’s IT services and India’s hardware sector was hit instead of benefitting from the pact.

- The ITA was concluded by 29 participants at the Singapore Ministerial Conference in December 1996. It entered into force on 1st July 1997.
- It seeks to accelerate and deepen the reduction of trade barriers for the critically important ICT industry.
- India is a signatory to the agreement. The participants are committed to completely eliminating tariffs on IT products covered by the Agreement.

Source: FORUMIAS

Awareness in Field of IT & Space – II

Q.1) The “Juice Mission” is often seen in news launched by?

- a) NASA
- b) JAXA
- c) ISRO
- d) European Space Agency

ANS: D

Explanation: European Space Agency (ESA) has launched JUICE from Europe's spaceport French Guiana on to Jupiter and its moons through Ariane-5.

Mission is to study Jupiter and its three large ocean-bearing moons – Ganymede, Callisto and Europa.

Source: FORUMIAS

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Q.2) Which of the following statements are correct about “Jupiter Planet”?

1. It is the largest planet in our solar system.
2. It has highest number of moons.
3. It has a faint ring system.

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: Jupiter: Fifth from the Sun and largest planet in the solar system. One of the Jovian planets (others are Saturn, Uranus and Neptune).

- Jovian Planets do not have solid surfaces; instead, it is composed primarily of hydrogen and helium, with traces of methane, ammonia, water, and other gases in their atmospheres.
- 2nd highest number of moons (95) after Saturn (146 moons). Has a faint ring system.

Source: FORUMIAS

Q.3) Consider the following statements regarding “BL Lacertae (BL Lac)” blazer:

1. It is observed by the Indian Astronomical Observatory.
2. It is a type of galaxy that is powered by a humongous black hole.

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

ANS: C

Explanation: Indian Astronomical Observatory (located in Hanle of Ladakh) has observed the brightening of BL Lacertae (BL Lac), a blazar.

- A Blazar is a type of galaxy that is powered by a humongous black hole. It is among one of the brightest and most powerful objects in the universe.
- It is known for emitting highly energetic particles and radiation.

Source: FORUMIAS

Q.4) The term “Nabhmitra” device for the safety of fisherman is recently seen in news developed by?

- a) INCOIS
- b) DRDO
- c) ISRO
- d) NPCIL

ANS: C

Explanation: Nabhmitra', a device developed by ISRO-Space Applications Centre (Ahmedabad) for the safety of fishermen, was successfully tested at Neendakara.

- The satellite-based communication system enables two-way messaging services from and to the sea.
- While weather and cyclone warnings will be communicated in the local language, the boats can also send distress messages to the authorities.

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- In emergency situations like capsizing and fire, fishers can press a button on the device and get in touch with the control centre.
- While the control centre will receive the alert including the location of the boat, the crew on the boat will get a response message from the control centre.

Source: <https://www.thehindu.com/news/national/kerala/isro-developed-device-for-fishers-safety-successfully-tested-at-neendakara/article67241902.ece>

Q.5) The “Flamingo project” is recently seen in news related to?

- a) Cosmological supercomputer simulations
- b) Bird conservation
- c) Coastal area protection
- d) Sea lane communication

ANS: A

Explanation: FLAMINGO is a project of the Virgo consortium for cosmological supercomputer simulations. It stands for Full-hydro Large-scale structure simulations with All-sky Mapping for the Interpretation of Next Generation Observations.

Source: FORUMIAS

Q.6) The “FEAST, a Finite Element Analysis (FEA) software” is recently seen in news developed by?

- a) Vikram Sarabhai Space Centre
- b) DRDO
- c) BARC
- d) Nuclear Fuel Complex

ANS: A

Explanation: Vikram Sarabhai Space Centre (VSSC), the lead centre of ISRO has developed FEAST, a Finite Element Analysis (FEA) software.

- It is a computerized method for predicting how a product reacts to real-world forces.
- It will be used to perform FEA of various types of structures including rockets, aircraft, satellites, buildings, etc.

Source: FORUMIAS

Q.7) The term “Betelgeuse” is often seen in news related to?

- a) Brightest star
- b) Bacteria found in deep sea
- c) Ancient bacteria
- d) Extinct mammal species

ANS: A

Explanation: Betelgeuse, seventh brightest star in sky (discounting the Sun), is spotted in constellation Orion. It is also called as ‘Thiruvathirai’ or ‘Ardra’ in Indian astronomy.

Source: FORUMIAS

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Q.8) The terms “GAPAR, AWaRe and GLASS” is often seen in news associated with?

- a) Microbial resistance
- b) Bio – fertilizers
- c) Hybrid variety of maize
- d) Exoplanets

ANS: A

Explanation: WHO in partnership with the Global AMR R&D Hub has released ‘Incentivizing the development of New Antibacterial Treatments 2023’ Report.

- Global Steps to handle AMR:
- Global Action Plan on Antimicrobial Resistance (GAPAR) by WHO
- AWaRe (Access, Watch, Reserve) Tool by WHO.
- Global Antimicrobial Resistance and Use Surveillance System (GLASS) by WHO
- Global Antibiotic Research and Development Partnership (GARDP)

Source: FORUMIAS

Q.9) The terms “Casgevy and Lyfgenia” is recently seen in news related to?

- a) Gene therapies
- b) Bio – pesticides
- c) Rice varieties
- d) Vaccines

ANS: A

Explanation: Casgevy and Lyfgenia, first cell-based gene therapies, is approved for treatment of SCD in patients 12 years of age and older.

India has also launched the National Sickle Cell Anaemia Elimination Mission to tackle SCD.

Source: FORUMIAS

Q.10) The “Preparedness and Resilience For Emerging Threats (PRET)” initiative is recently seen in news launched by?

- a) WHO
- b) WTO
- c) UNEP
- d) UNDP

ANS: A

Explanation: World Health Organisation (WHO) launched Preparedness and Resilience For Emerging Threats (PRET) Initiative.

- It is an innovative approach to improve disease pandemic preparedness.
- Recognizes that the same systems, capacities, knowledge, and tools can be leveraged and applied for groups of pathogens based on their mode of transmission (respiratory, vector-borne, foodborne etc.).
- Provides a platform for national, regional and global stakeholders to collaborate to strengthen preparedness.

Source: FORUMIAS

Revision

Q.1) Consider the following statements regarding “Chandrayaan-3”:

1. It is the world’s 1st mission to soft-land near the lunar South Pole.
2. India is the sixth country to soft-land on the moon.

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

ANS: A

Explanation: The Indian Space Research Organization (ISRO) has launched the Chandrayaan-3.

- Chandrayaan-3 is India’s 3rd lunar mission and follow-on to the unsuccessful Chandrayaan-2.
- Chandrayaan-3 is the world’s 1st mission to soft-land near the lunar South Pole and India 4th country to soft-land on the moon.

Source: FORUMIAS

Q.2) The “Artemis Accords” is often seen in news related to?

- a) Outer Space
- b) Nuclear reactors
- c) Arab peace zone
- d) Export control regimes

ANS: A

Explanation: The US established the Artemis Accords together with 7 other founding member nations in 2020.

- The Artemis Accords reinforce and implement key obligations in the 1967 Outer Space Treaty.
- These Accords are a non-binding set of principles designed to guide civil space exploration cooperation among nations participating in the agency’s 21st century lunar exploration plans.
- It currently has 27 signatories including India.

Source: FORUMIAS

Q.3) The term “Lagrange points” is often seen in news related to?

- a) Criticality of nuclear reactors
- b) Positions in space
- c) Genome combinations
- d) Vaccine manufacturing

ANS: B

Explanation: Lagrange points - Lagrange points are positions in space where objects sent there tend to stay put.

- At Lagrange points, the gravitational pull of two large masses precisely equals the centripetal force required for a small object to move with them.
- These points in space can be used by spacecraft to reduce fuel consumption needed to remain in position.
- Of the five Lagrange points, three are unstable (L1, L2 and L3) and two are stable (L4 and L5).

Source: FORUMIAS

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Q.4) Consider the following statements regarding “NavIC system”:

1. It is a regional navigation satellite system of India.
2. It is designed with a constellation of 9 satellites.

Which of the statements given above is/are incorrect?

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

ANS: B

Explanation: NavIC (Navigation with Indian Constellation) is a regional navigation satellite system of India.

- It is erstwhile known as the Indian Regional Navigation Satellite System (IRNSS).
- NavIC is designed with a constellation of 7 satellites, all launched by PSLV rockets - 3 satellites of the constellation are placed in geostationary orbit and the other 4 are placed in inclined geosynchronous orbit.

Source: FORUMIAS

Q.5) Which of the following state has signed the MOU with OneWeb to set up India’s first ‘satellite network portal site’?

- a) Maharashtra
- b) Gujarat
- c) Madhya Pradesh
- d) Tamil Nadu

ANS: B

Explanation: OneWeb is to set up India’s first ‘satellite network portal site’ through a MoU signed with Gujarat government in Gujarat.

Source: FORUMIAS

Q.6) Consider the following statements regarding “XPoSat mission”:

1. It is built by Space application centre, Ahmadabad.
2. It is to study various dynamics of bright astronomical X-ray sources in extreme conditions.

Which of the statements given above is/are incorrect?

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

ANS: A

Explanation: The X-Ray Polarimeter Satellite (XPoSat) is being built in collaboration with the Raman Research Institute (RRI), Bengaluru.

India’s first, and only the world’s second polarimetry mission. It is meant to study various dynamics of bright astronomical X-ray sources in extreme conditions.

Source: FORUMIAS

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Q.7) Which of the following country/countries is/are participating in “LUPEX mission”?

1. Japan
2. France
3. India

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: B

Explanation: With Chandrayaan-3 successfully landing on the Moon’s South Pole, ISRO is planning for its next lunar mission LUPEX.

- LUPEX - Lunar Polar Exploration will be accomplished in partnership with Japan’s space agency, Japan Aerospace Exploration Agency (JAXA).
- The mission is slated to be launched in 2025. The launch vehicle and rover for this programme are supposed to be contributed by the Japanese agency, while the lander will be contributed by ISRO.

Source: FORUMIAS

Q.8) Which of the following space agency recently launched the TROPICS mission?

- a) ISRO
- b) NASA
- c) European Space Agency
- d) ROSCOSMOS

ANS: B

Explanation: NASA launches 'TROPICS' mission to improve understanding about hurricanes, cyclones.

- TROPICS is a constellation of 4 Cubesats in three low earth orbital planes that will measure temperature, humidity and precipitation with spatial resolution on hourly basis.
- It will provide microwave measurements over the tropics to observe the thermodynamics of the troposphere.

Source: FORUMIAS

Q.9) The term “Enceladus” is recently seen in news related to?

- a) Saturn moon
- b) Asteroid
- c) Meteorite
- d) Neptune moon

ANS: A

Explanation: High concentrations of phosphorus have been detected by NASA’s Cassini spacecraft in ice crystals spewed from the interior ocean of Saturn’s moon Enceladus.

Enceladus is a small moon of Saturn with an ocean of liquid water beneath its icy crust. It’s the first time phosphorous has been discovered in an ocean beyond Earth.

Source: FORUMIAS

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Q.10) CALIPSO satellite which monitors climate, weather and air quality using LIDAR has ended its science mission after 17 years was launched by which of the following space agency?

- a) NASA
- b) JAXA
- c) ISRO
- d) ROSCOSMOS

ANS: A

Explanation: CALIPSO satellite which monitors climate, weather and air quality using LIDAR has ended its science mission after 17 years.

- CALIPSO - Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation (CALIPSO) Mission.
- Launched in - 2006 by the NASA and France's CNES (Centre National d'Etudes Spatiales).

Source: FORUMIAS

Awareness in the field of Defense technology

Q.1) Consider the following statements regarding "Status of India's Defense Production":

1. India is the world's biggest arms importer.
2. India is the largest military spender in the world.

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

ANS: A

Explanation: India is the world's biggest arms importer but the major weapons purchases include provisions for joint manufacture or technology transfer.

- Of India's total volume of procurement in 2016– 20, 84% was of foreign origin.
- As per Stockholm International Peace Research Institute (SIPRI), India bought weapons worth over \$60 billion in the last 20 years, of which 65% were from Russia.
- India is the third largest military spender after the United States and China.

Source: FORUMIAS

Q.2) The army exercise "INDRA" is between India and which of the following country?

- a) France
- b) Russia
- c) Japan
- d) Australia

ANS: B

Explanation: USSR was India's strategic partner during the Cold War and also its primary military equipment supplier.

- Moscow loaned the 1st nuclear submarine to India in 1988, which was commissioned as INS Chakra.
- Joint exercises- "INDRA" are held between the three-Armed Forces. Indian contingent participated in International Army Games, Ex Vostok in Russia.

Source: FORUMIAS

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Q.3) The term “IDEX-Prime” is often seen in news related to?

- a) Defense start ups
- b) Gene projects
- c) Hybrid solar projects
- d) Farming start ups

ANS: A

Explanation: IDEX-Prime - To encourage projects that may necessitate support beyond Rs. 1.5crore and up to Rs. 10crore, to help developing start-ups in the defense sector.

Source: FORUMIAS

Q.4) The “Project Swavlamban” is often seen in news related to?

- a) Indigenization of defense equipment
- b) Women empowerment
- c) Financial inclusion
- d) Satellite manufacturing

ANS: A

Explanation: Project Swavlamban- It is an initiative to promote Atmanirbhar (self-reliance) in the defense sector by encouraging indigenization of defense equipment and technology.

Source: FORUMIAS

Q.5) The term “WARDEC” is often seen in news related to?

- a) Satellite development
- b) Radar development
- c) Research centre for war game
- d) Coastal security system

ANS: C

Explanation: WARDEC - The Army Training Command has signed a MoU with Rashtriya Raksha University (RRU) to develop a Wargame Research and Development Centre (WARDEC) in New Delhi. It will be India's first simulation-based training centre.

Source: FORUMIAS

Q.6) The term “Agni-D” is recently seen in news related to which of the following?

- a) Ballistic missile
- b) Cruise missile
- c) Surveillance software
- d) Stealth missile

ANS: C

Explanation: Agni-D- it is an “AI-based surveillance software” developed by the Indian military for border security and threat detection which was unveiled at Aero India, one of Asia's largest air shows, in 2023. It was deployed in eastern Ladakh sector, a region of strategic importance due to its closeness to China.

Source: FORUMIAS

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Q.7) Which of the following missile is NOT part of Integrated Guided Missile Development Programme (IGMDP)?

- a) S - 400
- b) AGNI
- c) AKASH
- d) NAG

ANS: A

Explanation: Integrated Guided Missile Development Programme (IGMDP): It is a Ministry of Defence programme to research and develop missiles.

- The project was started in 1982–1983 under the leadership of Dr APJ Abdul Kalam. It accomplished its design objectives by 2012.
- The DRDO and erstwhile Ordnance Factories Board (OFB) managed the programme with other Indian government political organizations.
- Missiles developed under IGMDP are 1. PRITHVI 2. AGNI 3. TRISHUL 4. AKASH 5. NAG.

Source: FORUMIAS

Q.8) The term “Agni – P” is often seen in news related to which of the following?

- a) Ballistic missile
- b) Cruise missile
- c) Surveillance software
- d) Stealth missile

ANS: A

Explanation: New Generation Ballistic Missile ‘Agni Prime’ or Agni – P was successfully flight-tested by Defense Research and Development Organization (DRDO).

It is a nuclear-capable new-gen advanced variant of the Agni class of missiles.

Source: FORUMIAS

Q.9) Consider the following statements regarding “ASTRA missile”:

1. It is a Beyond Visual Range class of Air-to-Air Missile system.
2. It was designed to be mounted on fighter aircraft to destroy highly manoeuvring supersonic aerial targets.

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

ANS: C

Explanation: ASTRA – It is a Beyond Visual Range (BVR) class of Air-to-Air Missile (AAM) system.

- It was designed and developed by the Defense Research and Development Laboratory (DRDL), Research Centre Imarat (RCI) and other laboratories of the DRDO.
- Targets - It was designed to be mounted on fighter aircraft to destroy highly manoeuvring supersonic aerial targets.

Source: FORUMIAS

Q.10) The “Project Mausam” is often seen in news associated with which of the following?

- a) Atlantic Ocean
- b) Indian Ocean
- c) Pacific Ocean
- d) Antarctica Ocean

ANS: B

Explanation: Project Mausam - To re-establish communication between countries of the Indian Ocean, to create an understanding of cultural values & concerns.

Source: FORUMIAS

Awareness in the field of Nano-technology, Biotechnology and related issues of IPR policies

Q.1) Consider the following statements regarding “Mitochondria”:

- 1. It is the power house of cells.
- 2. The chemical energy produced by the mitochondria is stored in a small molecule called adenosine triphosphate (ATP).

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

ANS: C

Explanation: Mitochondria - They are membrane-bound cell organelles that are the powerhouses of the cells as they generate the energy needed to power the cell's biochemical reactions.

- Chemical energy produced by the mitochondria is stored in a small molecule called adenosine triphosphate (ATP).
- Mitochondria contain their own small chromosomes.
- Generally, mitochondria, and mitochondrial DNA, are inherited only from the mother.

Source: FORUMIAS

Q.2) Consider the following statements regarding “Genome”:

- 1. It contains all the information needed for an individual to develop and function.
- 2. In humans, the genome consists of 23 pairs of chromosomes located in the cell's nucleus, as well as in the mitochondria.

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

ANS: C

Explanation: Genome - It is the entire set of DNA instructions found in a cell.

- It contains all the information needed for an individual to develop and function.

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- In humans, the genome consists of 23 pairs of chromosomes located in the cell's nucleus, as well as in the mitochondria.
- Each chromosome is a contiguous stretch of DNA string which in turn is composed of millions of individual building blocks called nucleotides or bases.

Source: FORUMIAS

Q.3) Which of the following is/are genome sequencing method/s?

1. Clone-by-Clone method
2. Whole genome shotgun sequencing
3. Next-Generation Sequencing

How many of the statements given above are correct?

- a) Only one
- b) Only two
- c) Only three
- d) None

ANS: C

Explanation: Methods deployed for Genome sequencing: Clone-by-Clone method- It is a traditional method that requires high density genome map and works well for larger genomes like eukaryotic genomes.

- Whole genome shotgun sequencing- It is the improved version of Clone-by-Clone method that doesn't require a genome map. It is the faster method of sequencing but not suitable for larger genomes as they have a number of repetitive DNA sequences.
- Next-Generation Sequencing- It is the most advanced, robust, accurate, faster, cheaper and high throughput genome sequencing technique.

It relies on the chemistry of bridge amplification and can sequence more than 5 separate human genomes simultaneously. It is the most trusted Genome Sequencing method so far.

Source: FORUMIAS

Q.4) The Genetically Engineered (GE) organisms or cells and hazardous microorganisms and products thereof are regulated as per?

- a) Wildlife Protection Act
- b) Environment (Protection) Act
- c) Biodiversity Act
- d) Biotechnology regulatory Act

ANS: B

Explanation: GE organisms or cells and hazardous microorganisms and products thereof are regulated as per 'Rules 1989' under the Environment (Protection) Act of 1986.

Source: FORUMIAS

Q.5) The "Nasha Roko Committee" is recently seen in news formed by?

- a) Punjab
- b) Maharashtra
- c) Tamil Nadu
- d) Uttar Pradesh

ANS: A

Explanation: A vigilant wave is sweeping through villages in Punjab to tackle the decade-old drug problem. It is an informal committee to stop the use and sale of drugs. It act against the drugs Chitta and the prescription-only pharma drug, pregabalin.

Source: FORUMIAS

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Q.6) Which of the following company gets the U.S. Food and Drug Administration's (FDA) approval for study of brain implants in humans?

- Neuralink
- Meta
- IBM
- Apple

ANS: A

Explanation: Elon Musk's company Neuralink gets the U.S. Food and Drug Administration's (FDA) approval for study of brain implants in humans.

- Neuralink is brain-implant Company, co-founded by Elon Musk.
- Neuralink is making a Class III medical device known as a brain-computer interface (BCI).
- The device connects the brain to an external computer via a Bluetooth signal, enabling continuous communication back and forth.

Source: FORUMIAS

Q.7) Consider the following statements regarding "Advanced Driver Assistance Systems (ADAS)":

1. It is an electronic system of automated vehicle safety features.
2. It uses innovative sensor technology to provide information, warnings, and assistance to the driver while they are driving.

Which of the statements given above is/are correct?

3. 1 only
4. 2 only
5. Both 1 and 2
6. Neither 1 nor 2

ANS: C

Explanation: Car manufactures have started providing ADAS which could create a safe traffic environment resulting in reduced accidental death.

- Electronic system - Advanced Driver Assistance Systems (ADAS) is an electronic system of automated vehicle safety features.
- The System uses innovative sensor technology to provide information, warnings, and assistance to the driver while they are driving.

Source: FORUMIAS

Q.8) Which of the following is/are advantage/s of "super capacitors"?

1. Quick charging and discharging
2. Exhibit long life
3. Bigger in size

How many of the statements given above are correct?

- Only one
- Only two
- Only three
- None

ANS: B

Explanation: Supercapacitors are a type of electrochemical energy storage systems which have great power density and specific capacitance.

Advantages of Super capacitors: Quick charging and discharging

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- Exhibit long life since they are not subject to chemical degradation as in conventional batteries
- Greater power density (can release energy more quickly)
- Smaller in size
- Provides back-up power during power outages in space applications

Source: FORUMIAS

Q.9) Consider the following statements regarding “Lithium titanate battery”:

1. It utilizes lithium-titanate nanocrystals instead of carbon on the surface of the anode.
2. It has lower inherent charge.

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

ANS: C

Explanation: A lithium-titanate or lithium titanate oxide (LTO) battery is an improved version of Lithium ion batteries (LiB).

- Lithium titanate battery utilises lithium-titanate nanocrystals instead of carbon on the surface of the anode.
- Lithium-titanate nanocrystals allow the anode to gain more surface area than carbon which permits the electrons to enter and exit the anode quickly.
- The ability to donate or accept electrons in the electrolytic solutions of lithium ions with titanium oxides is more likely than the same reaction with graphite.
- This allows for fast charging capacity in the case of lithium titanate than in the case of carbon. Unlike conventional LiB, it has lower inherent charge.

Source: FORUMIAS

Q.10) Consider the following statements regarding “Helium”:

1. It is abundantly found on earth.
2. It is extracted from natural gas reserves.

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

ANS: B

Explanation: Helium, despite being the 2nd most abundant element in the universe, is a rare commodity on earth.

The only way to source helium is to extract it from natural gas reserves.

Source: FORUMIAS