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A Series

1. Consider the following statements

about geothermal energy

1. Geothermal energy is natural heat from the interior of the earth that can be used to generate electricity as well as to heat up buildings.

2. The Puga valley in the Ladakh region has the most promising geothermal field

3. Geothermal energy can pose several environmental problems

Which of the above statements is/ are

correct?

A) 1 only

B) 2 only

C) 1 & 3 only

D) 1,2,3

Solution ANS: D

Geothermal energy is natural heat from the interior of the earth that can be used to generate electricity as well as to heat up buildings.

In India, Northwestern Himalayas and the western coast are considered geothermal areas. The Puga valley in the Ladakh region has the most promising geothermal field. Geothermal energy can pose several environmental problems which includes on-site noise, emissions of gas and disturbance at drilling sites.

2. Consider the following statements

about Indian Renewable Energy Development Agency (IREDA)

1. IREDA is a Mini Ratna (Category – I) Government of India Enterprise.

2. It is under the administrative control of ministry of Environment, Forests and climate change.

3. IREDA is Public Limited Government Company established as a NonBanking Financial Institution

Which of the above statements is/ are

correct?

A) 3 only

B) 1&3 only

C) 2 &3 Only

D) 1,2,3

Solution:

Ans:B

IREDA is a Mini Ratna (Category – I) Government of India Enterprise.

It is under the administrative control of Ministry of New and Renewable energy

IREDA is Public Limited Government Company established as a **Non-**

Banking Financial Institution in 1987 engaged in promoting, developing and extending financial assistance for setting up projects relating to new and renewable sources of energy and energy

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efficiency/conservation with the motto:
"Energy For Ever".

3. Statement 1: The International Solar Alliance (ISA) is a treaty-based international intergovernmental organization

Statement 2: Under this alliance, 121 countries that fall within tropics i.e. between Tropic of Cancer and Tropic of Capricorn have been invited to make collaborative efforts to harness solar energy to generate the electricity.

Statement 3: The Secretariat of ISA is in Gurgaon

Select the correct answer :

- A) Only Statement 1,3 is correct
- B) Only Statement 2,3 is correct
- C) Only Statement 1 & 2 is correct
- D) All the above are correct

Solution:

Ans : D

The International Solar Alliance (ISA) is first treaty-based international intergovernmental organisation to be based in India.

The International Solar Alliance was inaugurated by the Indian Prime Minister and French President in National Institute of Solar Energy (NISE) in **Gwalpahari, Gurgaon** along with the interim Secretariat of the ISA.

It has been set up with UN as strategic partner.

The International Solar Alliance (ISA) is an alliance of more than 121 countries, most of them being sunshine countries, which come either completely or partly between the **Tropic of Cancer** and the **Tropic of Capricorn**. The alliance's primary objective is work for efficient exploitation of **solar energy** to reduce dependence on **fossil fuels**

4. Which of the following are **correct** with respect to the effects of salinity and alkalinity?

- a) It reduces soil fertility.
- b) Cultivation is not possible on saline soils unless they are flushed out with large quantities of irrigation water to leach out the salts.
- c) Choice of crops is limited to salinity tolerant crops like cotton, barley etc.

Select the correct answer using the code given below

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

Solution:

Ans : D

Facts about Effects of salinity and alkalinity

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- Salinity and alkalinity have adverse effect on soil and reduce soil fertility.
 - Cultivation is not possible on saline soils unless they are flushed out with large quantities of irrigation water to leach out the salts.
 - Choice of crops is limited to salinity tolerant crops like cotton, barley etc..
 - Quality of fodder and food produced in poor in quality.
 - Salinity and alkalinity create difficulties in building and road construction.
 - These cause floods due to reduced percolation of water.
- Organic residues such as rice husks and rice straw can be added to promote formation of mild acid as a result of their decomposition.
 - Flushing the salt by flooding the fields with excess water. However, this practice can lead to accumulation of saline water in the downstream area.
5. Consider the following statements regarding Biochemical oxygen Demand(BOD) . Which of the following statements is/are **correct**?

Steps to treat salinity and alkalinity

- Providing outlets for lands to drain out excess water and lower water table.
 - Seal leakages from canals, tanks and other water bodies by lining them.
 - Making judicious use of irrigation facilities.
 - Improve vegetal cover to avoid further degradation by planting salt tolerant vegetation.
 - Crop rotation..
 - Liberal application of gypsum to convert the alkalies into soluble compounds.
 - Alkali can be removed by adding sulphuric acid or acid forming substances like sulphur and pyrite.
- a) It is used to estimate the amount of organic matter in water
 - b) It is used to estimate the amount of inorganic matter in water
 - c) It is the oxygen added with chemicals to catalyse water purification
 - d) It is the amount of oxygen required by anaerobic organisms for breakdown of organic matter.

Ans:A

Explanation:

Biochemical oxygen demand (BOD, also called biological oxygen demand) is the amount of dissolved oxygen needed (i.e., demanded) by **aerobic** biological organisms to break down organic material present in a given water

sample at certain temperature over a specific time period.

It is used to Estimate the amount of organic matter in water.

6. Consider the following statements about algal blooms

- 1) Harmful algal blooms (HABs) are known as red tides, as Such blooms often take on a red colour.
- 2) The decay process of algae in the water, results in hyper-oxiconditions.
- 3) Eutrophication is a condition of increased nutrients in water which in turn proves to be beneficial for aquatic life.

Which of the following **are incorrect**?

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

SOLUTION: B

EXPLANATION

- Harmful algal blooms (HABs) blooms take on a red or brown hue and are known colloquially as red tides

- Algae tend to grow very quickly under high nutrient availability, but each alga is short-lived, and the result is a high concentration of dead organic matter which starts to decay. The decay process consumes dissolved oxygen in the water, resulting in hypoxic conditions.

Nitrates and phosphates are nutrients that plants need to grow. In small amounts they are beneficial to many ecosystems. In excessive amounts, however, nutrients cause a type of pollution called eutrophication. Eutrophication stimulates an explosive growth of algae (algal blooms) that depletes the water of oxygen. When the algae die and are eaten by bacteria. Estuarine waters may become hypoxic (oxygen poor) or anoxic (completely depleted of oxygen) from algal blooms. While hypoxia may cause animals in estuaries to become physically stressed, anoxic conditions can kill them.

7. The process of decomposition during soil formation involves which of the following ?

- 1) Catabolism
- 2) Humification
- 3) Fragmentation
- 4) Mineralisation.

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Select the **correct** answer :

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

SOLUTION: D

Explanation

- Decomposers break down complex organic matter into inorganic substances like carbon dioxide, water and nutrients and the process is called decomposition.
- The important steps in the process of decomposition are fragmentation, leaching, catabolism, humification and mineralisation.
- Detritivores (e.g., earthworm) break down detritus into smaller particles. This process is called fragmentation. By the process of leaching, water soluble inorganic nutrients go down into the soil horizon and get precipitated as unavailable salts. Bacterial and fungal enzymes degrade detritus into simpler inorganic substances. This process is called as catabolism.
- Humification leads to accumulation of a dark coloured amorphous substance called humus that is highly resistant to

microbial action and undergoes decomposition at an extremely slow rate. Being colloidal in nature it serves as a reservoir of nutrients.

- It is important to note that all the above steps in decomposition operate simultaneously on the detritus
- The humus is further degraded by some microbes and release of inorganic nutrients occur by the process known as mineralisation

-
8. Recently India signed agreement on water conservation with which country that is well known for its water conservation strategy ,as it treats almost all its sewage and reuses the water in agriculture

- a)Saudi Arabia
- b)Israel
- c)Egypt
- d)Brazil

SOLUTION:B

EXPLANATION:

India and **Israel** signed agreements on **water conservation** and recycling, where **Israel's** technology is considered the most advanced.**Israel** treats almost all its sewage and reuses the water in agriculture.

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Israel desalinates 90% of the water used in our households from the sea, and then recycle 95% of their sewage water for agriculture.

9. Consider following statements

regarding National Clean Energy fund

1) Proceeds from clean environment

cess come under National Clean Energy fund.

2) It is funding research and innovative projects in clean energy technologies of public sector or private sector entities.

3) It is a non lapsable fund under Public Accounts of India.

Which of the above statements are

correct?

a) 1 ,2 and 3

b) 1 and 2

c) 1 and 3

d) None of the above

Solution : A

Explanation:

- The National Clean Energy Fund (NCEF) is a fund created in 2010-11 using the carbon tax - clean energy cess (Now renamed as clean environment cess) - for funding research and innovative projects in clean energy technologies of public sector or private sector entities, upto

the extent of 40% of the total project cost. Assistance is available as a loan or as a viability gap funding, as deemed fit by the Inter-Ministerial group, which decides on the merits of such projects.

- The Fund is designed as a non lapsable fund under Public accounts .

- Creation of NCEF was announced in the Union Budget 2010-11.

- **An Inter-Ministerial Group, chaired by the Finance Secretary in Ministry of Finance** (and comprising of Secretaries of Departments of Expenditure and Revenue at Ministry of Finance, Principal Scientific Advisor to the Government of India, a representative of Planning Commission and a Representatives of Ministry sponsoring the proposal and other Ministries concerned with that specific proposal) recommends projects eligible for funding under NCEF.

- Upon recommendation by NCEF, the final approval is given by the Minister of the concerned nodal Ministry (which initially approved and decided to take the project submitted by the public or private entity to NCEF) if the project cost is below Rs. 150 Crore; by Minister of Finance and the Minister of the concerned nodal Ministry if the project cost is between Rs. 150 Crore and 300

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crore; and by the Cabinet Committee on Economic Affairs if the project cost is above Rs. 300 Crore. between Rs. 150 Crore and 300 crore; and by the Cabinet Committee on Economic Affairs if the project cost is above Rs. 300 Crore.

10. Consider the following statements regarding Mission “Kakatiya”

Statement 1: It is a program of restoring all the tanks and lakes in Andhra Pradesh State.

Statement 2: The name 'Mission Kakatiya' is given in the remembrance and tribute to the Kakatiya rulers who developed a large number of the irrigation tanks.

Choose the correct option:

- a) Only Statement 1 is correct
- b) Only Statement 2 is correct
- c) Both Statement 1 & 2 are correct
- d) Neither Statement 1 nor statement 2 is correct

Solution:

Ans : B

- Mission kakatiya is a program of restoring all the tanks and lakes in **Telangana State, India.**

➤ Construction of tanks in Telangana has been an age old activity since pre Satavahana era. During the Kakatiya era, the construction of tanks was carried out with utmost technical expertise. Tanks such as Ramappa, Pakhala, Laknavaram, Ghanapuram, Bayyaram which were built by Kakatiyas resemble seas and they greatly helped agriculture and overall development and prosperity of the Kakatiya kingdom.

➤ This vision and legacy of Kakatiyas were carried forward by Qutubshahis and Asafjahis who ruled this region for centuries. Hundreds of big and small tanks were built in Telangana region during their rule. Government desires to uphold the vision of Kakatiyas which envisages revival and restoration of Minor Irrigation Sources in Telangana State.

11. Consider the following statements about UJALA

- 1) It is a LED based Domestic Efficient Lighting Programme (DELP)
- 2) It is being implemented by Bureau of Energy Efficiency (BEE)

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

- A. 1 Only

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- B. 2 Only
- C. Both 1 & 2
- D. Neither 1 nor 2

Solution:

Ans : A

- UJALA is LED based Domestic Efficient Lighting Programme (DELP). UJALA, an acronym for UnnatJyoti by Affordable LEDs for All, is being **implemented by Energy Efficiency Services Limited (EESL)**.

The National LED programme was launched by the Hon'ble Prime Minister on January 2015 with a target of replacing 77 crore incandescent lamps with LED bulbs.

12. Consider the following statements regarding the E-Waste Management Rules , 2016 in India

- 1) The E-waste rules failed to include Compact Fluorescent Lamp (CFL) and other mercury containing lamps, as well as other such equipments.
- 2) There is a provision of penalty for violation of rules.
- 3) The Central Pollution Control Board will give the single authorization throughout the country for dismantling and recycling of e waste.

Which of the statements are true?

Options:

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

Solution: B

The Ministry of Environment, Forest and Climate Change has notified the E-Waste Management Rules, 2016 in supersession of the e-waste (Management & Handling) Rules, 2011. Norms have been made more stringent and reflect the government's commitment to environmental governance. **The E-waste rules will now include Compact Fluorescent Lamp (CFL)** and other mercury containing lamps, as well as other such equipment.

The Rules will bring the producers under Extended Producer Responsibility (EPR), along with targets. Producers have been made responsible for collection of E-waste and for its exchange.

"The bulk consumers must collect the items and hand them over to authorized recyclers". Various producers can have a separate Producer Responsibility Organisation (PRO) and ensure collection of E-waste, as well as

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its disposal in an environmentally sound manner.

Role of State Governments has been also introduced to ensure safety, health and skill development of the workers involved in dismantling and recycling operations.

There is a provision of penalty for violation of rules .

The process of dismantling and recycling has been simplified through one system of authorization and that the Central Pollution Control Board will give the single authorization throughout the country.

The transportation of E-waste has been made more stringent. 17 lakh tonnes of E-waste is generated every year, with an annual increase of 5 per cent of generation of E-waste.

13. Consider the following statements regarding Plastic Waste Management Rules, 2016

1) Minimum Thickness of Plastic Carry Bags permitted decreased from 50 to 40 Microns

2) The rules are applicable to municipal areas only but not to villages.

3) Extended producer responsibility as well as responsibility for waste generator is applicable for management of plastic waste

Which of the statements are true?

OPTIONS

a) 1 2 and 3

b) 2 and 3

c) 1 and 3

d) 3 only

Solution: D

Explanation

Minimum Thickness of Plastic Carry Bags Increased from 40 to 50 Microns.

The rules, which were admissible upto municipal areas, have now been extended to all villages.

Extended producer responsibility as well as responsibility for waste generator is applicable for management of plastic waste

The shopkeepers and street vendors willing to provide plastic carry bags for dispensing any commodity shall register with local body

14. **Statement 1:** Mission 41K is to save Rs 41,000 crore on the Indian Railways' expenditure on energy consumption over the next 10 years

Statement 2: This target will be achieved by taking a slew of measures which include moving 90 per cent of traffic to electric traction over diesel
Choose the **correct** options:

a) Only Statement 1 is correct

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- b) Only Statement 2 is correct
- c) Both Statement 1 & 2 are correct
- d) Neither Statement 1 nor statement 2 is correct

Solution: C

Mission 41k to save Rs. 41000 crore in the next decade in Railways' energy costs. To implement this comprehensive strategy with the participation of various stakeholders, we shall take advantage of regulatory frameworks, look at new technologies.

All electrification works done in the last decade would be doubled and this would change the energy mix of Indian Railways. Indian Railways has set a target of 1000 MW of solar power and 200 MW of wind energy

15. Consider the following statements regarding GRIHA RATING

- 1) It is a national rating system for green buildings in India
- 2) Green Rating for Integrated Habitat Assessment (GRIHA) was conceived and developed by Ministry of Environment, Forests and Climate change

Which of the above statements are

correct?

- A) 1 Only
- B) 2 Only

- C) Both 1 & 2
- D) Neither 1 nor 2

Solution: A

Green Rating for Integrated Habitat Assessment (GRIHA) was conceived by TERI and developed with **Ministry of New and Renewable Energy**, is a national rating system for **green buildings** in India.

The Energy and Resources

Institute (TERI) is a **research institute** based in **New Delhi** that conducts research work in the fields of energy, environment and sustainable development. Established in 1974, it was formerly known as Tata Energy and Resource Institute. As the scope of its activities widened, it was renamed The Energy and Resources Institute in 2003.

16. Consider the following statements about FAME India scheme

- 1) The FAME India scheme was launched in 2015 under National Electric Mobility Mission Plan (NEMMP) with an aim to promote eco-friendly vehicles in the country
- 2) It is being administered by the Ministry of New and renewable energy
- 3) Monetary incentives for adoption and

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market creation of hybrid and electric vehicles will not be given under this scheme

Which of the statements **are true?**

- a) 1 only
- b) 2 and 3
- c) 1 and 3
- d) All the above

Solution : A

FAME stands for Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles

The FAME India scheme was launched in 2015 under National Electric Mobility Mission Plan (NEMMP) with an aim to promote eco-friendly vehicles in the country

The scheme has 4 focus areas i.e.

- a. Technology development,
 - b. Demand Creation,
 - c. Pilot Projects and
 - d. Charging Infrastructure.
2. The FAME India Scheme is aimed at incentivizing all vehicle segments i.e. 2 Wheeler, 3 Wheeler Auto, Passenger 4 Wheeler Vehicle, Light Commercial Vehicles and Buses.
3. Its objectives is to provide fiscal and monetary incentives for adoption and market creation of both hybrid and

electric technologies vehicles in the country

4. It is being administered by Ministry of heavy industries

17. Consider the following statements regarding Organic farming in India

- 1) Himachal Pradesh is the first fully organic state of India
 - 2) *ParamparagatKrishiVikasYojna* scheme is to promote Organic farming in India
- Which of the above statements are

correct?

- A) 1 Only
- B) 2 Only
- C) Both 1 & 2
- D) Neither 1 nor 2

Solution: B

- Sikkim is the first fully organic state of India

Key features of

ParamparagatKrishiVikasYojna

- Groups of farmers would be motivated to take up organic farming under *ParamparagatKrishiVikasYojana* (PKVY). Fifty or more farmers will form a cluster having 50 acre land to take up the organic farming under the scheme.

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- In this way during three years 10,000 clusters will be formed covering 5.0 lakh acre area under organic farming. There will be no liability on the farmers for expenditure on certification.
- Every farmer will be provided Rs. 20,000 per acre in three years for seed to harvesting of crops and to transport produce to the market.
- Organic farming will be promoted by using traditional resources and the organic products will be linked with the market.
- It will increase domestic production and certification of organic produce by involving farmers

18. Which of the following features is **not**

correct regarding India's Intended Nationally Determined Contribution (INDC) targets

A) To reduce the emissions intensity of its GDP by 33 to 35 per cent by 2030 from 2005 level.

B) To create an additional carbon sink of 2.5 to 3 billion tonnes of CO₂ equivalent through additional forest and tree cover by 2030.

C) **Produce 60 per cent of electricity from non-fossil fuel based energy**

resources by 2030, if international community helps with technology transfer and low cost finance.

D) Develop robust adaptation strategies for agriculture, water and health sectors

Solution :C

Nationally Determined Contributions (NDC)

- The national pledges by countries to cut emissions are voluntary.
- The Paris Agreement requires all Parties to put forward their best efforts through “nationally determined contributions” (NDCs) and to strengthen these efforts in the years ahead.
- This includes requirements that all Parties report regularly on their emissions and on their implementation efforts.
- In 2018, Parties will take stock of the collective efforts in relation to progress towards the goal set in the Paris Agreement.
- There will also be a global stock take every 5 years to assess the collective progress towards achieving the purpose of the Agreement and to inform further individual actions by Parties.

India's Intended Nationally Determined Contribution (INDC)

1. India's INDC include a reduction in the emissions intensity of its GDP by 33 to 35 per cent by 2030 from 2005 level.
2. India has also pledged to create an additional carbon sink of 2.5 to 3 billion tonnes of CO₂ equivalent through additional forest and tree cover by 2030.
3. India will anchor a global solar alliance, INSPA (International Agency for Solar Policy & Application), of all countries located in between Tropic of Cancer and Tropic of Capricorn.
4. **Produce 40 per cent of electricity from non-fossil fuel based energy resources by 2030, if international community helps with technology transfer and low cost finance.**

19. **Which of the following are the reasons for soil degradation?**

- a. Jhum cultivation
- b. Decline of soil fertility
- c. Water logging
- d. Salinity

Choose the correct option:

- a. 1,3 and 4
- b. 1,2 and 4
- c. 2,3 and 4

d. All the above

Solution : D

Decline of soil fertility

- Soil fertility is mostly affected in the states of Punjab, Haryana, and U.P.
- It is a condition when the soil is not giving enough production even though adequate irrigation and nutrients are supplied.
- The major reasons for decline of soil fertility are:
 1. Frequent cropping
 2. Unscientific rotation of crops
 3. Extensive and excessive use of chemical fertilizers
 4. Too much use of chemical pesticides
- Land should left uncultivated for a period of time and let to retain its fertility. Cropping after cropping will leave the land unfertile.
- Leguminous plants can be cultivated in intervals which will increase the fertility of the soil.
- Water logging
 - If there is no proper drainage system in the land, the land will become waterlogged.
 - This results in the saturation of crops.
 - The normal circulation of air will not be possible due to water logging and the

amount of oxygen in the soil will decline.

- Construction of proper drainage system to allow water flow away from the land is the best way to reduce water logging.

Salinity

- Soil will become saline or alkaline in low rainfall areas. Rajasthan is an example.
- When the sea water enters the land, the soil becomes saline.
- The presence of calcium carbonate beneath (kankar) the soil will act as impermeable to water and water gets logged as happened in Indira Gandhi canal regions of Rajasthan. If the soil contains salt content, it will spread to the whole land due to this.

Shifting / jhum cultivation

- It is a type of cultivation practiced mainly in North-Eastern states of India
- It is a type of slash and burn method of cultivation.
- After reaping the crops, the land (usually the forest) is slashed and burned. The next cultivation will be in another plot and the burned land will let uncultivated for a period.
- In the early periods, the gap between two cultivations in a land was 10-20 years.

- Due to population increase and availability of land is reduced, the gap decreased to merely 2-3 years.
- This causes major deforestation, environmental pollution, loss of habitat for wild animals etc.
- The burning of forest results in soil erosion and gradual degradation of soil.

20. **Statement 1:** Earth Hour is a worldwide movement organized by the **World Wide Fund for Nature** (WWF).

Statement 2: The event is held annually encouraging individuals, communities, and businesses to turn off non-essential electric lights for one hour as a symbol of commitment to the planet.

Statement 3: It was started as a lights-off event in **Sydney, Australia**, in 2007

Choose the correct options:

- A) Only Statement 1 is correct
- B) Only Statements 1 & 2 are correct
- C) Only Statements 2 & 3 are correct
- D) All three statements are correct

Solution: D

- Earth Hour is a worldwide movement organized by the **World Wide Fund for Nature** (WWF). The event is held annually encouraging individuals, communities, and businesses to turn

off non-essential electric lights for one hour, from 8:30 to 9:30 pm on a specific day towards the end of March, as a symbol of commitment to the planet.

- It was started as a lights-off event in **Sydney, Australia**, in 2007. Since then, it has grown to engage more than 7,000 cities and towns across 172 countries.

21. Which of the following are the techniques of bio remediation?

1. Bioleaching
2. Bio augmentation
3. Rhizofiltration
4. Bio reactor

Choose the **correct** answer:

- a. 1,3 and 4
- b. 1,2 and 4
- c. 2,3 and 4
- d. All the above

Answer : D

Bioreactor

- A bioreactor may refer to any manufactured or engineered device or system that supports a biologically active environment. It is generally a vessel in which a chemical process is carried out which involves organisms or biochemically active substances derived from such organisms. This process can

either be aerobic or anaerobic. These bioreactors are commonly cylindrical, ranging in size from litres to cubic metres, and are often made of stainless steel.

- A bioreactor may also refer to a device or system meant to grow cells or tissues in the context of cell culture. These devices are being developed for use in tissue engineering or biochemical engineering.

Bioaugmentation

- Bioaugmentation is the process of addition of bacterial cultures required to speed up the rate of degradation of a contaminant.
- Usually the steps involve studying the indigenous varieties present in the location to determine if biostimulation is possible. If the indigenous variety do not have the metabolic capability to perform the remediation process, exogenous varieties with such sophisticated pathways are introduced.
- Bioaugmentation is commonly used in municipal wastewater treatment to restart activated sludge bioreactors.

Rhizofiltration

- It's a Phytoremediation technique which uses hydroponically cultivated

plant roots to remediate contaminated water through absorption, concentration, and precipitation of pollutants. It also filters through water and dirt.

Bioleaching

- Bioleaching refers to extraction of metals from their ores through the use of living organisms. This is much cleaner than the traditional heap leaching. It is a sub-branch of biohydrometallurgy used to recover copper, zinc, lead, arsenic, antimony, nickel, molybdenum, gold, silver, cobalt etc.

Landfarming

- Landfarming is a bioremediation treatment process that is performed in the upper soil zone or in biotreatment cells. Contaminated soils, sediments, or sludges are incorporated into the soil surface and periodically turned over (tilled) to aerate the mixture. These land farming activities cultivate and enhance microbial degradation of hazardous compounds

Phytoremediation

Phytoremediation is treatment using the plants that mitigate the environmental problem. Some plants such as mustard, hemp and pigweed (जंगलीपालक in Hindi) have proven to be successful in Phytoremediation.

Bioremediation of Oil

Bioremediation uses the microorganisms or biological agents such as oil eating bacteria. There are three kinds of oil-consuming bacteria viz. Sulfate-reducing bacteria (SRB), Acid-producing bacteria are anaerobic and General aerobic bacteria (GAB). Out of them, Sulfate-reducing bacteria (SRB) and acid-producing bacteria are anaerobic, while general aerobic bacteria (GAB) are aerobic

22. Consider the following statements regarding Paris climate summit

1. For Paris Agreement to become operational it requires the signing and ratification by at least 55 countries which together account for at least 55 per cent of global greenhouse gas emissions.
2. It commits 196 countries to work together to limit global warming to no more than 2 degrees Celsius above pre-

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industrial levels, with a stretch goal of keeping below 1.5 C.


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

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Answer: C

Explanation: The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

http://unfccc.int/paris_agreement/items/9444.php

The Paris Agreement  entered into force on 4 November 2016, thirty days after the date on which at least 55 Parties to the Convention accounting in total for at least an **estimated 55 % of the total global greenhouse gas emissions have deposited their instruments of ratification**, acceptance, approval or accession with the Depositary

23. At the recently held (COP-23), which of the following initiatives did India mention as “reflection of our commitment towards addressing climate change concerns”

- 1. Pradhan Mantri Krishi Sinchayee Yojana
- 2. Zero Effect, Zero Defect
- 3. Swachh Bharat Mission
- 4. Atal Mission for Rejuvenation and Urban Transformation

- a) 1,2,3
- b) 2,3,4
- c) 1,2,4
- d) All of the above.

Answer: D

Explanation:

<http://pib.nic.in/newsite/PrintRelease.aspx?relid=173279>

24. Which of the following related to climate change conference is **correct**

- 1. The Bonn conference (COP-23) is CMA-3 and CMP-13
- 2. The next conference (COP-24) is slated to happen in Poland in 2018.
- 3. This is the 2nd time that a COP is being held in Poland.

- a) 1 only
- b) 2 only

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- c) 3 only
- d) None of the above

Explanation: B

COP 23 was CMP-13 and CMA-2 (CMA-1 was Marakkech).

The COP-24 is slated to happen in Katowice, Poland.

This is the 3rd time that the COP will be held in Poland (2013, 2008 were the earlier occasions)

25. Consider the following statements::

- 1. India is not a signatory to the Raptors MoU.
 - 2. India is set to host UNEP summit on Conservation of Migratory bird in 2020.
- Which of the given statement(s) is/are **correct?**

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Answer: B

Explanation:

Bird of prey or predatory bird, also known as raptors, refers to several species of birds that hunt and feed on rodents and other small animals. The term raptor is derived from the Latin word rapere, meaning to seize or take by force.[1] These birds are

characterized by keen vision that allows them to detect their prey during flight, as well as powerful talons and beaks

The Union Cabinet, chaired by the Prime Minister Shri Narendra Modi

gave its **approval to sign Memoranda of Understanding (MOU)** on the

Conservation of Migratory Birds of Prey in Africa and Eurasia, also called the 'Raptor MOU' with the Convention on

Conservation of Migratory Species

(CMS). With the signing of this MOU,

India will become the 54th signatory to

the MOU.(2016).The MOU seeks

willingness of the signatory Range

States for working for conservation of

the raptor species and their habitats.

The United Nations Environment

Programme (UNEP) has announced that

India will host next Convention on the

Conservation of Migratory Species of

Wild Animals (CMS) Conference of

Parties 13 (CMS COP13) in year 2020.

CMS COP is also known as a Global

Wildlife Conference.

26. Consider the following

- 1. Animal Welfare Board of India is a statutory body created under Prevention of cruelty to animals act.

2. Prevention of cruelty to animals rules, 2016 objective was to make pet shops accountable and to prevent cruelty inflicted on animals kept in such pet shops.

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

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above.

Answer: C

Explanation:

<http://pib.nic.in/newsite/PrintRelease.aspx?relid=155551>

27. The Central Pollution Control Board (CPCB), statutory organisation, was constituted in September, 1974 under :

- a) Water act
- b) Air Act
- c) EPA
- d) Forest rights Act

Answer: A

Explanation: The **Central Pollution Control Board (CPCB)**, statutory organisation, was constituted in September, 1974 under the Water (Prevention and Control of Pollution) Act, 1974. Further, CPCB was

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

It serves as a field formation and also provides technical services to the Ministry of Environment and Forests of the provisions of the Environment (Protection) Act, 1986. Principal **Functions** of the CPCB, as spelt out in the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981, (i) to promote cleanliness of streams and wells in different areas of the States by prevention, control and abatement of water pollution, and (ii) to improve the quality of air and to prevent, control or abate air pollution in the country.

Air Quality Monitoring is an important part of the air quality management. The **National Air Monitoring Programme** (NAMP) has been established with objectives to determine the present air quality status and trends and to control and regulate pollution from industries and other source to meet the air quality standards. It also provides background air quality data needed for industrial siting and towns planning.

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Besides this, CPCB has an automatic monitoring station at ITO Intersection in New Delhi. At this station Resirable Suspended Particulate Matter (RSPM), Carbon Monoxide (CO), Ozone (O₃), Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂) and Suspended Particulate Matter (SPM) are being monitored regularly. This information on Air Quality at ITO is updated every week.

28. Strategy on resource efficiency was released by :

- a) World bank
- b) Ministry of New and renewable resource.
- c) Nitiaayog and EU
- d) None of the above

Answer: C

Explanation: NITI Aayog in collaboration with the European Union delegation to India have released the Strategy on Resource Efficiency at a function in the capital today. The report included in action plan for promoting resource efficiency in India. Mr. Ratan P. Watal, Principal Advisor, NITI Aayog, mentioned that sustainability is a

global priority and SDGs commitment and 11th Five year plan clearly enunciate importance of Resource efficiency (RE). Resource Efficiency and Circular Economy are important goals and central principles for achieving sustainable development.

<http://pib.nic.in/newsite/PrintRelease.aspx?relid=174013>

29. Consider the following regarding SATH:

- 1. This was launched by NITI Aayog to initiate transformation in the education and health sectors.
- 2. SATH aims to identify and build three future 'role model' states for health and education system.

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

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Answer: C

Explanation:

<http://pib.nic.in/newsite/PrintRelease.aspx?relid=165545>

NITI Aayog has launched SATH, a program providing 'Sustainable Action

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for Transforming Human capital' with the State Governments. The vision of the program is to initiate transformation in the education and health sectors. The program addresses the need expressed by many states for technical support from NITI.

- SATH aims to identify and build three future 'role model' states for health systems.
- NITI will work in close collaboration with their state machinery to design a robust roadmap of intervention, develop a program governance structure, set up monitoring and tracking mechanisms, hand-hold state institutions through the execution stage and provide support on a range of institutional measures to achieve the end objectives.
- The program will be implemented by NITI along with McKinsey & Company and IPE Global consortium, who were selected through a competitive bidding process

30. Consider the following regarding **SAATHI** and choose the **INCORRECT** statement:

1. The Ministry of Power along with the Ministry of Textiles have launched Sustainable and Accelerated Adoption

of efficient Textile technologies to help small Industries.

2. SAATHI initiative of the Government will be jointly implemented by EESL and the office of the Textile Commissioner.

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Answer:D

Explanation: Ministries of Power and Textiles have joined hands under a new initiative **SAATHI(Sustainable and Accelerated Adoption of efficient Textile technologies to Help small Industries)**. Under this initiative, Energy Efficiency Services Limited (EESL), a public sector entity under the administrative control of Ministry of Power, would procure energy efficient Powerlooms, motors and Rapier kits in bulk and provide them to the small and medium Powerloom units at no upfront cost.

The SAATHI initiative of the Government will be jointly implemented by EESL and the office of the Textile Commissioner on a pan-India basis. To kick start the implementation, cluster wise demonstration projects and workshops will be organized in key

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clusters such as Erode, Surat, Ichalkaranji, etc.

<http://pib.nic.in/newsite/PrintRelease.aspx?relid=171894>

31. Which of the following statement(s) is/are **correctly** matched?

SDG Goals

Nodal Ministry

1) End poverty in all its forms everywhere
---- Rural Development

2) Ensure access to affordable, reliable, sustainable and modern energy for all
---- New and Renewable

3) Reduce inequality within and among countries
--- Social Justice & Empowerment

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

Answer: B

Explanation:

<http://www.niti.gov.in/writereaddata/files/SDGs%20V22->

[Mapping%20August%202017-](http://www.niti.gov.in/writereaddata/files/SDGs%20V22-Mapping%20August%202017-)

[VERIFIED-Uploaded.pdf](#)

Ensure access to affordable, reliable, sustainable and modern energy for all is under Ministry of Power.

32. The concept of 'Sustainable Development' was clearly defined for the first time in :

- a) Brundtland Commission
- b) Earth summit
- c) World Sustainable development summit
- d) None of the above

Answer: A

Explanation: World Commission on Environment and Development (Brundtland Commission) published its report in 1987, it presented a new concept - sustainable development. The concept became one of the most successful approaches to be introduced in many years. In fact, it helped to shape the international agenda and the international community's attitude towards economic, social and environmental development.

The Brundtland Commission's report defined sustainable development as "development which meets the needs of current generations without compromising the ability of future generations to meet their own needs". The concept supports strong economic and social development, in particular for people with a low standard of living. At the same time it underlines the importance of protecting the natural resource base and the environment.

Economic and social well-being cannot be improved with measures that destroy the environment.

33. Consider the following statements about TKDL:

1. Traditional Knowledge Digital Library (TKDL) is a pioneer initiative of India to prevent misappropriation of country's traditional medicinal knowledge.
2. TKDL is an effective deterrent against bio-piracy and is being recognized as a global leader in the area of traditional knowledge protection.

Which of the following statement(s) is/are **correct**?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Answer: C

Explanation:

IN the WTO ministerial conference in Buenos Aires (Dec-2017), India circulated a paper to make it mandatory for anyone seeking to patent a product or process that uses genetic resources and traditional knowledge, an issue on which there has been discussion in the past but has not moved due to

opposition from the US, Australia and Japan.

Traditional Knowledge Digital Library (TKDL) is a pioneer initiative of India to prevent misappropriation of country's traditional medicinal knowledge at International Patent Offices on which healthcare needs of more than 70% population and livelihood of millions of people in India is dependent. Its genesis dates back to the Indian effort on revocation of patent on wound healing properties of turmeric at the USPTO. Besides, in 2005, the TKDL expert group estimated that about 2000 wrong patents concerning Indian systems of medicine were being granted every year at international level, mainly due to the fact that India's traditional medicinal knowledge which exists in local languages such as Sanskrit, Hindi, Arabic, Urdu, Tamil etc. is neither accessible nor comprehensible for patent examiners at the international patent offices.

TKDL is proving to be an effective deterrent against bio-piracy and is being recognized as a global leader in the area of traditional knowledge protection. In 2011, an International Conference was organized by World

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Intellectual Property Organization (WIPO) in collaboration with CSIR on 'Utilization of Traditional Knowledge Digital Library as a Model for Protection of Traditional Knowledge', at New Delhi. Pursuant to this, WIPO in collaboration with CSIR and DIPP (Ministry of Commerce and Industry) organized an 'International Study Visit To TKDL' for 19 countries interested in replication of TKDL.

2. The Water (Prevention and Control of Pollution) Cess Act, 1977;
3. The Forest (Conservation) Act, 1980;
4. The Air (Prevention and Control of Pollution) Act, 1981;
5. The Environment (Protection) Act, 1986;
6. The Public Liability Insurance Act, 1991;
7. The Biological Diversity Act, 2002.

34. Which of the following acts come under the jurisdiction of NGT:

1. The Forest (Conservation) Act, 1980;
 2. The Air (Prevention and Control of Pollution) Act, 1981;
 3. The Environment (Protection) Act, 1986.
- a) 1,2,3
b) 1,2
c) 1,3
d) 2,3

Answer: A

Explanation: The NGT has the power to hear all civil cases relating to environmental issues and questions that are linked to the implementation of laws listed in Schedule I of the NGT Act. These include the following:

1. The Water (Prevention and Control of Pollution) Act, 1974;

This means that any violations pertaining only to these laws, or any order / decision taken by the Government under these laws can be challenged before the NGT. Importantly, the NGT has not been vested with powers to hear any matter relating to the Wildlife (Protection) Act, 1972, the Indian Forest Act, 1927 and various laws enacted by States relating to forests, tree preservation etc

35. Consider the following regarding

Wetland Conservation and conservation rules 2017:

1. The new rules stipulate setting up of a State Wetlands Authority in each State and union territories
2. The rules prohibit activities like conversion of wetland for non-wetland uses including encroachment of any

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kind, setting up of any industry and expansion of existing industries

Which of the following statement(s) is/are **correct**?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Answer: C

Explanation: The new rules stipulate setting up of a State Wetlands

Authority in each State and union territories that will be headed by the State's environment minister and include a range of government officials.

They will also include one expert each in the fields of wetland ecology, hydrology, fisheries, landscape planning and socioeconomics to be nominated by the state government.

These authorities will need to develop a comprehensive list of activities to be regulated and permitted within the notified wetlands and their zone of influence, recommend additional prohibited activities for specific wetlands, define strategies for conservation and wise use of wetlands, and undertake measures for enhancing awareness within stakeholders and local communities on values and

functions of wetlands. Wise use is defined as the principle of sustainable uses that is compatible with conservation.

The State authorities will also need to prepare a list of all wetlands of the State or union territory within three months, a list of wetlands to be notified within six months, a comprehensive digital inventory of all wetlands within one year which will be updated every ten years.

The rules prohibit activities like conversion of wetland for non-wetland uses including encroachment of any kind, setting up of any industry and expansion of existing industries, manufacture or handling or storage or disposal of hazardous substances and construction and demolition waste, solid waste dumping, discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements.

36. Consider the following:

Statement 1: Montreux Record is a list of sites under Ramsar convention

Statement 2: Sites included are those where changes in ecological character have occurred, are occurring, or are likely to occur as a result of

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technological developments, pollution or other human interference.

Which of the following statement(s) is/are **correct**?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Answer: C

Explanation: The Montreaux Record is a voluntary mechanism to highlight specific wetland of international importance under the Ramsar convention, but which are facing immediate challenges. In particular, the Montreaux Record is a register of listed Ramsar sites where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference. At present, 51 sites were listed in the Montreaux Record. The Montreaux Record was established by Recommendation 4.8 at the 1990 COP. Indian sites in the Montreaux Record are Keoladeo National Park-Rajasthan, Loktak Lake – Manipur.

1. National Parks and Wildlife Sanctuaries are set up within the legal framework of Wildlife (Protection) Act, 1972.

2. Tiger Reserves have been given legal protection under Wild Life (Protection) Act, 1972.

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

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

Answer: C

Explanation: Since a national park is created by central legislation, it has a permanent status. National Parks have been set up within the legal framework of Wild Life (protection) Act, 1972. In a national park, human activity is totally prohibited, except the tourism and recreation. Wildlife sanctuary is an area constituted by a competent authority in which hunting or capturing of animals is prohibited except by or under control of the highest authority responsible for management of the area.

Project Tiger was launched by the Government of India in the year 1973 to save the threatened species of tiger in the country. Project Tiger is a

37. Consider the following statements:

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Centrally Sponsored Scheme of Government of India which was launched on the 1st of April, 1973 for in-situ conservation of wild tigers in designated tiger reserves. By the 2006 amendment, the provisions for tiger protection are added to the Wildlife (Protection) Act 1972.

38.

Match the following:

1. Species area relation ship

a) Paul Ehrlich

2. Rivet Popper hypothesis

b) Alexander von Humboldt

3. Vavilov

c) Norman Myers

4. Biodiversity hot spots

d) Crop genetic diversity

Options

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

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

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

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

Sol: D

39. With reference to Nagoya Protocol, sometimes seen in news, consider the following statements:

1. It is a supplementary agreement to the Convention on Biological Diversity.

2. The protocol was adopted in Oct-2010.

3. It provides a transparent legal framework for the fair and equitable sharing of benefits arising out of the utilization of genetic resources.

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, 3

Answer: D

Explanation: The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity is a supplementary agreement to the Convention on Biological Diversity. It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilization of genetic resources.

The Protocol was adopted on 29 October 2010 in Nagoya, Japan, and entered into force on 12 October 2014. It has been ratified by 97 parties, which

includes 96 UN member states and the European Union^[5]. It is the second Protocol to the CBD; the first is the 2000 Cartagena Protocol on Biosafety

40. Consider the following statements:

1. Allelopathy is a common biological phenomenon by which one organism produces biochemicals that influence the growth, survival, development, and reproduction of other organisms.
2. Sustainable agriculture is a type of agriculture that focuses on producing long-term crops and livestock while having minimal effects on the environment.

Which of the following statement(s) is/are **correct**?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Answer: C

Explanation: Sustainable agriculture is a type of agriculture that focuses on producing long-term crops and livestock while having minimal effects on the environment. This type of agriculture tries to find a good balance between the need for food production and the preservation of the ecological

system within the environment. In addition to producing food, there are several overall goals associated with sustainable agriculture, including conserving water, reducing the use of fertilizers and pesticides, and promoting biodiversity in crops grown and the ecosystem. Sustainable agriculture also focuses on maintaining economic stability of farms and helping farmers improve their techniques and quality of life.

Allelopathy is a common biological phenomenon by which one organism produces biochemicals that influence the growth, survival, development, and reproduction of other organisms. These biochemicals are known as allelochemicals and have beneficial or detrimental effects on target organisms.

Plant allelopathy is one of the modes of interaction between receptor and donor plants and may exert either positive effects (e.g., for agricultural management, such as weed control, crop protection, or crop re-establishment) or negative effects (e.g., autotoxicity, soil sickness, or biological invasion). To ensure sustainable agricultural development, it is important to exploit cultivation systems

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that take advantage of the stimulatory/inhibitory influence of allelopathic plants to regulate plant growth and development and to avoid allelopathic autotoxicity.

41. Which of the following statement(s) is/are correct?

1. Copper is a very useful mineral for various types of alloys – When alloyed with zinc, it produces bronze and when alloyed with tin, it produces brass.

2. Pyrolusite is the ore for Manganese

- a. Only 1
- b. Only 2
- c. Both 1 and 2
- d. Neither 1 and 2

CORRECT OPTION – (b)

42. Kigali Agreement is under which of the following :

- a) Montreal Protocol
- b) Nagoya protocol
- c) Kyoto Protocol
- d) None of the above

Answer: A

Explanation: A global climate deal was reached in Kigali, Rwanda at the Twenty-Eighth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer (MOP28). The Kigali Agreement amends the 1987

Montreal Protocol that aims to phase out Hydro fluorocarbons (HFCs), a family of potent greenhouse gases by the late 2040s. Around 197 countries, including India, China and the USA, agreed at Kigali to reduce the use of HFCs by roughly 85% of their baselines by 2045. The Kigali Agreement will be binding on countries from 2019. The Paris agreement which will come into force by 2020 is not legally binding on countries to cut their emissions.

43. Consider the following statements:

1. Environmental legislations have a constitutional backing in the form of article 48A and 51A

2. The Environmental protection Act 1986 has a provision for "Citizen suit"

Which of the above is/are **true**.

- a. Only 1
- b. Only 2
- c. Neither 1 or 2
- d. **Both 1 and 2**

Ans: C

Article 48A in The Constitution Of India 1949

48A. Protection and improvement of environment and safeguarding of forests and wild life The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country

Article 51A(g) in The Constitution Of India 1949

(g) to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures;

The Environment (Protection) Act, provided for the first time in 1986, citizen suit provisions in the lower courts. Under Section 19 of the Act, a citizen may prosecute a polluter by filing a complaint to a Judicial Magistrate Court. It can be done after giving 60 days notice to the State Pollution Control Board of his or her intention to the file a case. Hitherto, only the government could file a case.

44. Consider the following statements:

1. Any animal which poses a threat to human and their livelihood especially farming, can be declared Vermin under Schedule V of Wildlife Protection act 1972.
2. Wildlife Protection Act 1972, empower every State's Chief Wildlife Warden for culling.

Choose the **correct** statements:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Answer: C

Explanation: Any animal which poses a threat to human and their livelihood especially farming, can be declared Vermin under Schedule V of Wildlife Protection act 1972. States can send a list of wild animals to the Centre requesting it to declare them vermin for selective slaughter. Wildlife Protection Act 1972, empower every State's Chief Wildlife Warden for culling. Wild boars, nilgai and rhesus monkeys are protected under Schedule II and III, but can be hunted under specific conditions.

45. Consider the following regarding Climate smart agriculture:

1. Climate smart agriculture (CSA) is an integrative approach to address interlinked challenges of food security and climate change.
2. It is supported by Food and Agricultural Organisation (FAO).

Choose the **correct** statements:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Answer: C

Explanation: Climate smart agriculture (CSA) is an integrative approach to address these interlinked challenges of

food security and climate change. It basically **aims at three main objectives:** sustainably increasing agricultural productivity, to support equitable increases in farm incomes, food security and development; Adapting and building resilience to climate change at multiple levels; and Reducing and/or removing greenhouse gas emissions, where possible. It is supported by Food and Agricultural

Organisation (FAO).

46. Consider the following statements :

1. Sustainable tourism is defined as “tourism that respects both local people and the traveller, cultural heritage and the environment.
2. United Nations General Assembly has declared 2017 as the International Year of Sustainable Tourism.

Choose the **INCORRECT** statements:

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the above

Answer: D

Explanation: It is defined as “tourism that respects both local people and the traveller, cultural heritage and the environment”. It seeks to provide

people with an exciting and educational holiday that is also of benefit to the people of the host country.

Tourism is the third largest export industry in the world, with 1.235 million travelers crossing international borders. The United Nations General Assembly has declared 2017 as the International Year of Sustainable Tourism. It has called for an approach to tourism based on inclusive economic growth, bringing decent jobs to local communities, preservation of environment, addressing climate change and respecting the unique cultural identity of the people.

Thus, tourism development provides unique opportunity to promote better future for people, planet and prosperity.

The motto of the 2017 World Tourism Day is the respect nature, culture and respects the host

47. Consider the following statements about EIA

1. It is the responsibility of the Impact Assessment Authority to commission the preparation of the EIA for the proposed project

2 Felling of trees, drastic change in agriculture systems and commercial use of natural water resources are the

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activities regulated in the ecologically sensitive areas.

Choose **the CORRECT** statements:

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. None of the above

Answer: C

Explanation: It is the responsibility of the project proponent to commission the preparation of the EIA for the proposed project

The Central government may take into consideration the following factors while prohibiting or restricting the location of industries and carrying on of processes and operations in different areas-

- (i) Standards for quality of environment in its various aspects laid down for an area.
- (ii) The maximum allowable limits of concentration of various environmental pollutants (including noise) for an area.
- (iii) The likely emission or discharge of environmental pollutants from an industry, process or operation proposed to be prohibited or restricted.
- (iv) The topographic and climatic features of an area.

(v) The biological diversity of the area which, in the opinion of the Central Government needs to be preserved. The guidelines by the MoEF said activities, including commercial mining, setting of saw mills and industries causing pollution, commercial use of firewood and major hydro-power projects, are prohibited in such areas.

It also prohibits tourism activities like flying over protected areas in an aircraft or hot air balloon, and discharge of effluents and solid waste in natural water bodies or terrestrial areas.

Felling of trees, drastic change in agriculture systems and commercial use of natural water resources, including groundwater harvesting and setting up of hotels and resorts, are the activities regulated in the areas.

48. Consider the following statement and choose the **incorrect** option

- a. Vermi-compost is a practice under sustainable agriculture
- b. The aim of IPM is to eliminate the pests on a sustainable basis
- a. Only (a)
- b. Only (b)
- c. Both (a) and (b)
- d. Neither (a) and (b)

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Answer – (b)

The aim of IPM is to keep pests with-in the economic threshold limit (and not eliminate them).

49. Consider the following statements

1. The State Pollution Control Board shall mention the date, time and place of public hearing

2. Bona fide residents, environmental groups active in the region and person likely to affected by proposed project can participate in public hearing

3. All proposed developmental projects requires mandatory public hearing

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

- a. 1 only
- b. 1, 2 only
- c. 2, 3 only
- d. All the above

Answer : B

Explanation: The public hearing at, or in close proximity to, the site(s) in all cases shall be conducted by the State Pollution Control Board (SPCB) or the Union territory Pollution Control

Committee (UTPCC) concerned in the specified manner.

All persons including bona fide residents, environmental groups active in the project sites/displacement sites and person likely to affected by

proposed project can participate in public hearing. They can also make oral/written suggestion to SPCB.

All Category 'A' and Category B1 projects or activities shall undertake Public Consultation, except the following:-

- * Modernization of irrigation projects
- * All projects or activities located within industrial estates or parks approved by the concerned authorities, and which are not disallowed in such approvals.

- * Expansion of Roads and Highways which do not involve any further acquisition of land.

- * All Building /Construction projects/Area Development projects and Townships.

- * All Category 'B2' projects and activities.

- * All projects or activities concerning national defense and security or involving other strategic considerations as determined by the Central Government.

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'A' category projects require environment clearance from the Centre and the 'B' category projects from the concerned State Level Environment Impact Assessment Authority.

'B' category projects be further categorized as 'B1' and 'B2' (except for township and area development projects). The MoEF is assigned the task of issuing appropriate guidelines from time to time for such projects. The projects categorized as B1 require EIA report for appraisal and also have to undergo public consultation process. The projects categorized as 'B2' are to be appraised based on the application accompanied with pre-feasibility report and other relevant documents.

50. Consider the following statements about schemes to encourage use of cleaner energy and choose the **correct** statements.

1) **UnnatChulhaAbhiyan (UCA)** is a programme to develop and deploy improved biomass cook - stoves for providing cleaner cooking energy solutions in rural, semi - urban and urban areas.

2) The main objective of the Saur SujalaYojana is to empower farmers by providing them solar irrigation pumps at subsidized rates.

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. None of the above

Answer: c

Explanation:

UnnatChulhaAbhiyan (UCA) is a programme of the Ministry of New and Renewable Energy, Government of India.

To develop and deploy improved biomass cook - stoves for providing cleaner cooking energy solutions in rural, semi - urban and urban areas using biomass as fuel for cooking.

To mitigate drudgery of women and children using traditional chulha for cooking. To mitigate climate change by reducing the black carbon and other emissions resulting from burning biomass for cooking. The main objective of the Saur SujalaYojana is to empower farmers by providing them solar irrigation pumps at subsidized rates. The scheme is also aimed at strengthen the agriculture and rural development in rural Chhattisgarh.

51. Which of the following **are correct** regarding EIA?

- a) All the developmental projects appraised by State Level Expert Appraisal Committee requires EIA
- b) Only projects appraised by National level Authority requires EIA
- c) While some projects appraised by National level Authority not requires EIA, all projects appraised by State level authority requires EIA
- d) While some projects appraised by State level Authority not requires EIA, all projects appraised by National level authority requires EIA

Answer: d

Explanation: All projects and activities are broadly categorized in to two categories - Category A and Category B, based on the spatial extent of potential impacts and potential impacts on human health and natural and manmade resources.

All projects or activities included as Category 'A' in the Schedule, including expansion and modernization of existing projects or activities and change in product mix, shall require prior environmental clearance from the Central Government in the Ministry of Environment and Forests (MoEF) on the

recommendations of an Expert Appraisal Committee (EAC) to be constituted by the Central Government for the purposes of this notification. All projects or activities included as Category 'B' in the Schedule, including expansion and modernization of existing projects or activities as specified in sub paragraph (ii) of paragraph 2, or change in product mix as specified in sub paragraph (iii) of paragraph 2, but excluding those which fulfill the General Conditions (GC) stipulated in the Schedule, will require prior environmental clearance from the State/Union territory Environment Impact Assessment Authority (SEIAA)

52. Consider the following option with respect to pollution linked deaths

1. India has been ranked No. 1 in pollution related deaths (28 %) according to a report by The Lancet Commission on pollution and health
2. **Lancet** is a journal on environmental quality

Which of the above statement is / are **CORRECT?**

- a. Only 1
- b. Only 2
- c. Both 1 and 2

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- d. Neither 1 and 2

Answer – (a)

‘The Lancet’ - a weekly peer-reviewed general medical journal.

53. Consider the following statements

1. EIA nullifies the adverse impact of developmental activities on environment

2. EIA has been notified by Environment Protection Act, 1986

Choose **the wrong** statements

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. None of the above

Answer: a

Explanation: EIA reduces (not nullifies) the adverse impact of developmental activities on environment. EIA has notified under the Environment Protection Act 1986

54. A recent study found out the correlation between rapid urbanization, invasive species and decreasing sacred groves. Consider the following statements about Sacred Groves

1. Conservation of Sacred groves is provided under Environment Protection Act 1986

2. Maharashtra accounts for highest number of sacred grove followed by Karnataka

Choose the **correct** statements

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. None of the above

Answer: b

Explanation: Maharashtra accounts for highest number of sacred grove followed by Karnataka. There is no specific action programme for protection of sacred grove.

Conservation is provided under community reserve under Wild life protection act 1972.

55. In India which of the following projects requires clearance from central government

- (1) Industries
- (2) Mining
- (3) Thermal power plants
- (4) River valley projects

Choose the **correct** statements

- a. 1, 2 only
- b. 1, 2, 3 only
- c. 2, 3 only
- d. All the above

Answer: All the above

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Explanation:

All projects that require clearance from central government can be broadly categorized into the following:-

- (1) Industries
- (2) Mining
- (3) Thermal power plants
- (4) River valley projects
- (5) Infrastructure and CRZ (Coastal Regulation Zone)
- (6) Nuclear power projects.

56. Which of the following **are incorrect**?

- a. Coastal Zone Management Plans (CZMPs) are prepared by coastal states and approved by MoEF
- b. Forest clearance is necessary only if the project does involve diversion of forestland
- c. An Appraisal Committee constituted by the Ministry of Environment and Forests is the first to scrutinize a project
- d. None of the above

Answer: d

Explanation: Coastal Zone Management Plans (CZMPs) are prepared by coastal states or Union Territories as per rules set by CRZ notification 1991. This is prepared based on identification and categorization of coastal areas for

different activities and then submitted to the MoEF for approval.

When a project requires both environmental clearance as well as approval under the

Forest (Conservation) Act, 1980, proposals for both are required to be given simultaneously to the concerned divisions of the Ministry

An Appraisal Committee constituted by the Ministry of Environment and Forests to first scrutinize a project. This committee evaluates the impact of the project based on the data presented by the project authorities. If necessary, the Ministry of Environment and Forests may also with the investors and hold consultations with experts on specific issues as and when necessary

57. Consider the below statements and choose the **correct option** accordingly

1. The strongest EL-Nino of 21st century has occurred in 2015-16
 2. There has been jump in atmospheric concentration of CO₂ in 2016 reaching 403 ppm.
- a. Statement 1 and 2 are individually correct and 2 is the root cause for 1.
 - b. Statement 1 and 2 are individually correct and 1 is the root cause for 2.
 - c. Statement 1 alone is correct.

d. Statement 2 alone is correct.

ANSWER (b)

The strongest EL-Nino in 21st century has been observed in 2015-16 which along with anthropogenic emissions has been considered as a key reason for jump in CO₂ concentration in atmosphere (As per Green House gas bulletin)

58. Identify the **correct** statements from below

- 1) Standards and Labelling (S&L) programme provides the consumer an informed choice about the energy saving and thereby the cost saving potential of the relevant marketed product.
- 2) The STAR rating ranges from 1 to 5 in the increasing order of energy efficiency.
- 3) All the appliances are presently under voluntary labeling phase.

- a. 1, 2 only
- b. 1, 2, 3 only
- c. 2, 3 only
- d. 1, 3 only

Answer: a

Explanation:-

Standards and Labelling (S&L) programme has been identified as one

of the key activities for energy efficiency improvements

To provide the consumer an informed choice about the energy saving and thereby the cost saving potential of the relevant marketed product.

The scheme is currently invoked for 12 equipment's/appliances, i.e. ACs, Tube lights, Frost Free Refrigerators, Distribution Transformers, Induction Motors, Direct Cool Refrigerator, Geysers, Ceiling fans, Colour TVs, Agricultural pump sets, LPG stoves and Washing machine.

Four equipments / appliances viz. ACs, Tube lights, Frost Free Refrigerators and Distribution Transformers have been notified under mandatory labelling from 7th January, 2010. The other appliances are presently under voluntary labeling phase.

The energy efficiency labelling programs under BEE are intended to reduce the energy consumption of appliance without diminishing the services it provides to consumers. The STAR rating ranges from 1 to 5 in the increasing order of energy efficiency.

59. Consider the following statements and choose **the incorrect** option(s)

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1. The term RIO+20 is used with reference to UNCSO
 2. Montreal Protocol on Substances that Deplete the Ozone Layer is a protocol to the Vienna Convention for the Protection of the Ozone Layer
- a. Statement 1 only
 - b. Statement 2 only
 - c. Both statement 1 and 2
 - d. Neither 1 and 2

ANSWER (d)

The United Nations Conference on Sustainable Development (UNCSO), also known as Rio 2012, Rio+20,

60. Hydrogen is considered an alternative fuel. Identify which is **not an advantage** of it.
- a) Zero-emission electric vehicles,
 - b) Potential for domestic production,
 - c) Potential for high efficiency
 - d) Low flammability

Answer: - d

Explanation:-

Hydrogen is considered an alternative fuel. It is due to its ability to power fuel cells in zero-emission electric vehicles, its potential for domestic production, and the fuel cell's potential for high efficiency. In fact, a fuel cell coupled with an electric motor is two to three

times more efficient than an internal combustion engine running on gasoline. Hydrogen can also serve as fuel for internal combustion engines. The energy in 2.2 pounds (1 kilogram) of hydrogen gas contains about the same as the energy in 1 gallon (6.2 pounds, 2.8 kilograms) of gasoline.

Advantages

It is readily available.

It doesn't produce harmful emissions.

It is environmentally friendly. It is a non-toxic substance which is rare for a fuel source.

It can be used as fuel in rockets. It is both powerful and efficient. Also, given that it is environmentally friendly, it is a much safer choice compared to other fuel sources. A fun fact: hydrogen is three times as powerful as gasoline and other fossil fuels.

It is fuel efficient. Compared to diesel or gas, it is much more fuel efficient as it can produce more energy per pound of fuel. For example, a conventional combustion-based power plant usually generates electricity between 33 to 35 percent efficiency. Hydrogen fuel cells are capable of generating electricity of up to 65 percent efficiency.

It is renewable.

Disadvantages

It is expensive.

It is difficult to store.

It is not easy to replace existing infrastructure. Also, cars need to be refitted in order to accommodate hydrogen as fuel.

It is highly flammable. Hydrogen gas burns in air at very wide concentrations – between 4 and 75 percent.

It is dependent on fossil fuels. Although hydrogen energy is renewable and has minimal environmental impact, other non-renewable sources such as coal, oil and natural gas are needed to separate it from oxygen. While the point of switching to hydrogen is to get rid of using fossil fuels, they are still needed to produce hydrogen fuel.

61. Consider the following statements regarding species diversity. From the below choose the **incorrect statement**
- a) Increases as we move from equator to poles
 - b) Decreases with altitude
 - c) Improves with increase in nutrient level
 - d) In marine ecosystems, bio-diversity is high along the continental shelves

Answer:- a

Explanation:-

Species diversity is more in the tropical areas than temperate

Factors impacting species diversity

a. Latitude – Decreased as we move from equator to poles

b. Altitude – Decreases with altitude

c. Rainfall – Improves with rainfall

d. Nutrient levels in soil – Improves with increase in nutrient level

e. In marine ecosystems, bio-diversity is high along the continental shelves

Bio-diversity

62. Consider the following statements regarding CBD

1) CBD is one of the key agreements adopted during the Earth Summit held in Rio de Janeiro in 1992

2) India successfully hosted the eleventh meeting of the Conference of the Parties (COP 11) to the Convention on Biological Diversity (CBD)

Choose the **correct** statements

a. 1 only

b. 2 only

c. Both 1 and 2

d. None of the above

Answer:- c

Explanation:-

The CBD, one of the key agreements adopted during the Earth Summit held in Rio de Janeiro in 1992, is the first

comprehensive global agreement which addresses all aspects relating to biodiversity.

The Convention, while reaffirming sovereign rights of nations over their biological resources, establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic resources.

India successfully hosted the eleventh meeting of the Conference of the Parties (COP 11) to the Convention on Biological Diversity (CBD) held from 8-19 October 2012, in Hyderabad, India.

CoP-11 was the largest ever such conference organized in India.

India has taken up a number of biodiversity related activities, some of them quite unique and innovative, during her Presidency. These inter alia include:

Positioning of Science Express Biodiversity Special (SEBS) train as the brand Ambassador of CoP-11 for creating large-scale awareness on biodiversity issues.

Setting up of a biodiversity garden and a proposed National Biodiversity Museum on the site where the Prime

Minister had unveiled a commemorative Pylon in Hyderabad.

Adopting the logo and slogan of CoP-11 as the new logo and slogan of this Ministry.

63. From the below causes of bio-diversity depletion identify the one that **does not** belong to the **The Evil Quartet**

- a) Habitat loss and fragmentation
- b) Over-exploitation
- c) Alien species invasion
- d) Climate change

Answer: d

Explanation:-

Causes of bio-diversity depletion

There are four major causes („The Evil Quartet“ – Term used by American ecologist

Jared Diamond)

- a. Habitat loss and fragmentation – E.g. Amazon forest area cover has reduced from 16% of land surface to 6%.
- b. Over-exploitation - Over-exploitation of marine fish populations around the world has endangered some commercially important species
- c. Alien species invasion - When alien species are introduced unintentionally or otherwise, some of them turn invasive (cause harm to the environment)

d. Co-extinction - When a species becomes extinct, the plant and animal species associated with it in an obligatory way also become extinct. When a host fish species becomes extinct, its unique assemblage of parasites also meets the same fate.

64. Consider the following statements regarding

1. Core area: The core areas are freed of all human activities. It has the legal status of a national park or wildlife sanctuary. But it allows collection of minor forest produce, grazing.

2. Buffer area: The buffer areas are subjected to 'conservation-oriented land use'. It

comprises forest and non-forest land.

Choose the **correct** statements among following

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. None of the above

Answer: - b

Explanation:-

The various tiger reserves were created in the country based on 'core-buffer' strategy:

1. Core area: The core areas are freed of

all human activities. It has the legal status of a national park or wildlife sanctuary. It is kept free of biotic disturbances and forestry operations like collection of minor forest produce, grazing, and **other human**

disturbances are not allowed within.

2. Buffer area: The buffer areas are subjected to 'conservation-oriented land use'. It comprises forest and non-forest land. It is a multi-purpose use area with twin objectives of providing habitat supplement to spillover population of wild animals from core conservation unit and to provide site specific co-developmental inputs to surrounding villages for relieving their impact on core area.

65. Identify the correctly matched pairs from below

- 1) Bees: Pollination
- 2) Grasshopper: Weed control
- 3) Insects and Birds: Pest management
- 4) Earthworm and termites: Soil aeration

- a) 1 and 4 only
- b) 1, 3 and 4 only
- c) 3 and 4 only
- d) All the above

Answer: - d

Explanation

Role of Small Animals and Insects in Biodiversity

Insect pollination results in a uniform crop and, in some cases, an improvement of quality of the fruit. A very good example of an insect which is a good pollinator is the honey bee.

Some insects are very valuable to man because they kill the insect pests feeding on the crops.

Examples:

- Mud wasps feed on caterpillars
- Ants feed on various types of insects
- Birds feed on insects, thus protecting the crop. It is always necessary therefore to grow trees in fields along the bunds, to enable birds to nest in them and feed on the insects in the field.

Some of the insects feed on menacing weeds and destroy them and so they are considered helpful to man. E.g. The grasshopper feeds on a variety of weeds.

Ants, termites, bees and wasps build terrestrial nests and during the process of making tunnels and burrowing into the soil the soil particles get disintegrated. Soil aeration is facilitated. Sub-soil is brought to the surface resulting in the turning of the soil and the soil is enriched by addition

of insect saliva. The excreta and the bodies of dead insects also enrich the soil. The earthworm also plays a very important role in soil building, in fact the earthworm is known as the "friend of the farmer".

Insects help to convert dead bodies into simpler organic substances, before returning them to the soil where they become easily available as food for growing plants. e.g. termites, maggot of flies, larvae and adults of beetles, etc.

66. From the below identify the species which are protected by dedicated conservation projects in India.

- 1) Himalayan musk deer
- 2) Hangul
- 3) Lesser cats
- 4) Manipur brow antlered deer

Choose the **correct** answer:

- a) 1 and 4 only
- b) 1, 2 and 4 only
- c) 2 and 4 only
- d) All the above

Answer: - d

Explanation: Project Tiger Project Tiger was initiated as a Central Sector Scheme in 1973 with 9 tiger reserves located in different habitat types in 9 different states. There are totally 18

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Reserves in 13 states. At present tiger Conservation has been viewed in India not only as an effort to save an endangered species but, with equal importance, also as a means of preserving biotypes of sizeable magnitude.

Crocodile Breeding Project

The project was started in Orissa and then extended to several other states in April 1975 with UNDP assistance. The main objective was to protect the three endangered species of crocodiles namely - *Gavialis gangeticus*, *Crocodylus palustris* and the salt water crocodile, *Crocodylus porosus*.

Lesser Cats Project

The project was launched in 1976 with the assistance of WWF in India for conservation of four species of lesser cats e.g. *Felis bengalensis* Kerr, *Felis marmota* Martin, *Felis lemnur* Vigors Horsfield and *Felis viverrina* Bennet, found in Sikkim and Northern part of West Bengal.

The Manipur Brow-antlered Deer Project

This was launched in 1981 in Manipur to save the brow-antlered deer (*Cervus eldi*) which is on the verge of extinction. The habitat includes 35 sq.km. of park and sanctuary. The

population of the deer has increased from 18 to 27.

Project Elephant

It was launched in 1991 to protect the Asiatic elephant which is also a highly endangered species because of large scale poaching.

Project Rhino

It was launched in 1987 in Kaziranga Wildlife Sanctuary in Assam to save the lesser one horned rhinoceros from extinction. It covers an area of 430 sq.km. and is the natural of the dwindling rhino.

Himalayan musk deer project

This was launched in 1981 to save the endangered musk deer which is facing extinction. Captive breeding has yielded good results.

Project Hangul

This project was launched in 1970 in Kashmir valley to save the highly endangered Kashmir stag (*Cervus elaphus hanglu*) which is facing extinction. As a result their population has increased

67. Consider the following statements regarding National Biodiversity authority.

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1. It issues guidelines for access to biological resources and for fair and equitable benefit sharing
2. It advises the State Governments in the selection of areas of biodiversity importance

Choose the correct statements

- a. 1 only
- b. 2 only
- c. Both 1 and 2
- d. None of the above

Answer: - c

Explanation:-

Salient Provisions of Biological Diversity Act, 2002

- Section - 3: All foreign national require approval from NBA for obtaining Biological Resources.
- Section - 4: Indian individuals/entities to seek approval before transferring knowledge / research and material to foreigners.
- Section - 5: Guidelines for Government sponsored collaborative research projects.
- Section - 6: Prior approval of NBA before applying for any kind of IPR based on research conducted on biological material and or associated knowledge obtained from India.
- Section - 7: Indians required to provide prior intimation to State Biodiversity

Boards for obtaining biological material for commercial purposes. SBB can regulate such access. Growers and cultivators of Biological Diversity and *vaid*s and *hakims* who are practicing Indian system of medicines and local people exempted.

- Establishment of NBA, its composition.
- Determination of equitable benefit sharing by NBA
- Establishment of State Bio-diversity Boards
- National Biodiversity Fund
- State Bio-diversity Fund
- Impact assessment of developmental projects on biodiversity
- Regulate release of GMOs
- Measures for protecting the traditional knowledge
- Biodiversity heritage sites
- Notifications of threatened species
- Establishment of Biodiversity Management Committees by local bodies.
- Local Biodiversity Fund
- Appeals to High Court on the decision of NBA / SBB
- Orders of NBA / SBB at par with civil courts.
- Penalties - imprisonment upto 5 years and or a fine of 10 lakhs or to the extent of damage caused.

- Role of NBA:-
 - biological resource which is derived from India.
 - The National Biodiversity Authority may grant approval for undertaking any activity referred to in sections 3, 4 and 6.
 - The National Biodiversity Authority may-
 - (a) advise the Central Government on matters relating to the conservation of biodiversity, sustainable use of its components and equitable sharing of benefits arising out of the utilization of biological resources;
 - (b) advise the State Governments in the selection of areas of biodiversity importance to be notified under sub section (1) of section 37 as heritage sites and measures for the management of such heritage sites;
 - (c) perform such other functions as may be necessary to carry out the provisions of this Act.
 - The National Biodiversity Authority may, on behalf of the Central Government, take any measures necessary to oppose the grant of intellectual property rights in any country outside India on any biological resource obtained from India or knowledge associated with such
68. Consider the following statements regarding India's biological diversity
- 1) India has about 8 percent of the world's biodiversity on 2 percent of the earth's surface, making it one of the 12 mega-diversity countries in the world.
 - 2) An animal specified in Schedule I of the Wildlife (Protection) Act, 1972 is endangered or threatened or rare
 - 3) Only species that became extinct in India in the 20th century is the cheetah.
- Choose the **correct** statements
- a) 1 and 3 only
 - b) 1 and 2 only
 - c) 2 and 3 only
 - d) 1, 2, and 3
- Answer: - b
- Explanation:
- Schedule I animal: An animal specified in Schedule I of the Wildlife (Protection) Act, 1972 which is endangered or threatened or rare.
- Endemic:** When a species is found only in a particular geographical region because of its isolation, soil and climatic conditions it is said to be endemic.

Extinct: Permanent disappearance of a species in the wild after repeated searches of known or likely areas where they may occur.

Endangered: A species in danger of becoming extinct.

Threatened: A species that will become endangered if its present condition in the wild deteriorates.

Rare: A species that is not yet threatened with extinction, but is in need of close monitoring.

Vulnerable: A species experiencing a decline in the number of its population.

Two important species have become extinct in India in the 20th century.

The **pink-headed duck** was last seen in the wild in 1935 and the cheetah in 1949. This bird was largely restricted to the tall terai grasslands. The conversion of the grasslands to agricultural fields may have been one of the major reasons for the disappearance of this ground nesting species.

The **cheetah** was an inhabitant of open savannah forests and grasslands. Again, the loss of its habitats made sightings of the cheetah unusual even in the 19th century, till it disappeared totally from 20th century India.

69. Which of the following are correctly matched?

- i) Species richness - number of various species in a defined area.
- ii) Species abundance - relative numbers among species.
- iii) Phylogenetic diversity - genetic relationships between taxonomically unrelated species

Choose the appropriate code

- a) I, ii only
- b) ii, iii only
- c) I, iii only
- d) I, ii, iii.

Solution d

Species diversity refers to the variety of species within a geographical area.

Species diversity can be measured in terms of:

- (a) Species richness - refers to the number of various species in a defined area.
- (b) Species abundance - refers to the relative numbers among species. For example, the number of species of plants, animals and microorganisms may be more in an area than that recorded in another area.
- (c) Taxonomic or phylogenetic diversity - refers to the genetic relationships between different groups of species.

Kinds of species that are present in an area is also important. When taxonomically unrelated species are present in an area, the area represents greater species diversity as compared to an area represented by taxonomically related species.

70. According to Norman Myers, the hot spots are the richest and the most threatened reservoirs of biodiversity on the earth. Which of the following are criteria for determining a hot spot

- i) The area should support atleast 1500 endemic species.
- ii) It must have lost over 70 % of the original habitat.

Choose the appropriate code.

- a) i only
- b) ii only
- c) Both I & ii
- d) Neither I nor ii

Solution c

Biodiversity is not uniformly distributed across the geographical regions of the earth. Certain regions of the world are very rich in biodiversity. We also refer to them as “hot-spots”. For example, India accounts for only 2.4 % of the land area of the world; but it contributes approximately 8% species

to the global diversity due to existence of such pockets.

Norman Myers, a British Ecologist, developed the concept of hot spots in 1988 to designate priority areas for in situ conservation. According to him, the hot spots are the richest and the most threatened reservoirs of biodiversity on the earth. The criteria for determining a hot spot are:

- i) The area should support **>1500 endemic species,**
- ii) **It must have lost over 70 % of the original habitat**

Twenty-five biodiversity hot spots have been identified in the world. These hot spots are characterized by posing exceptionally high biodiversity.

71. Which of the following are correct?

- i) Critically endangered Pigmy hog
- ii) Endangered Red Panda
- iii) Vulnerable Black buck

Choose the appropriate option.

Choose the appropriate code.

- a) i, ii only
- b) ii, iii only
- c) I, iii only
- d) I, ii, iii.

Solution d.

- Critically endangered Pigmy hog
- Endangered Red Panda
- Vulnerable Black buck

72. Which of the following are **In-situ method** of conservation?

- i) Biosphere Reserves.
 - ii) National parks and sanctuaries.
 - iii) Botanical gardens.
- Choose the appropriate code.

- a) i, ii only
- b) ii, iii only
- c) I, iii only
- d) I, ii, iii.

Solution : A

Biosphere reserve , National parks are In-situ methods of Conservation.

Ex-situ (off-site) conservation of plants and animals outside their natural habitats. These include botanical gardens, zoo, gene banks, seek bank, tissue culture and cryopreservation.

National parks and sanctuaries

India is unique in the richness and diversity of its vegetation and wildlife. India's national parks and wildlife sanctuaries (including bird sanctuaries) are situated Ladakh in Himalayas to

Southern tip of Tamil Nadu with its rich bio-diversity and heritage. Wildlife sanctuaries in India attract people from all over the world as the rarest of rare species are found here.

With 96 national parks and over 500 wildlife sanctuaries, the range and diversity of India's wildlife heritage is unique.

73. Which of the following National Parks are **correctly matched** for their species?

- i) Kaziranga sanctuary – One-horned rhinoceros.
 - ii) Manas sanctuary – Wild buffaloes.
 - iii) Gir forest – Sambar, wild bears.
 - iv) Kelameru bird sanctuary – Pelicans .
- Choose the appropriate code.

- a) i, ii only
- b) ii, iii, iv only
- c) I, iii only
- d) I, ii, iii, iv.

Solution d

Many National Parks and Sancturies have been established to preserve wildlife in their natural environment. Some of them are given below along with important species found there.

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- Kaziranga sanctuary (Assam) – One-horned rhinoceros
- Manas sanctuary (Assam) – Wild buffaloes
- Gir forest (Gujarat) – Lions, chital, sambar, wild bears
- Kelameru bird sanctuary (Andhra Pradesh) – Pelicans and marine birds
- Dachigam sanctuary (Jammu and Kashmir) – Kashmir stags, Himalayan tahr, wild goats, sheep, antelopes.
- Bandipur sanctuary (Karnataka) – Indian bison, elephants, langurs
- Periyar sanctuary (Kerala) – Elephants, barking deer, sambhar
- Kanha National Park (Madhya Pradesh) – Tiger, leopards, wild dogs.
- Simipal National Park (Orissa) – Mangroves, marine turtles lay eggs
- Bharatpur bird sanctuary (Rajasthan) – Ducks, herons
- Corbett National Park (Uttaranchal) – Tigers, barking deer, sambar, wild bear, rhesus monkey.
- Jaladpara sanctuary (West Bengal) – Rhinoceros.

74. **Which of the following are true regarding India Integrated Coastal Zone Management (ICZM) Project?**

- i) The Project is done with the World Bank assistance.
- ii) The ICZM Project is being implemented as pilot investments in the coastal states of Gujarat, Odisha and West Bengal.

Choose the appropriate code

- a) i only
- b) ii only
- c) Both I & ii
- d) Neither I nor ii

Solution c

India Integrated Coastal Zone Management Project

To conserve, project and manage the coastal and marine environment, the Ministry is implementing the India Integrated Coastal Zone Management (ICZM) Project with the World Bank assistance. For the implementation of the project the Ministry has established a Society of Integrated Coastal Management (SICOM) as nodal body under the Society Registration Act, in Delhi.

The ICZM Project is being implemented as pilot investments in the coastal states of Gujarat, Odisha and West Bengal. National activities are

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implemented through Society of Integrated Coastal Management (SICOM) along with monitoring of activities carried out by three selected states. The project has four implementing agencies—MoEF at the national level with lead responsibilities, and the Departments of Forests and Environment (DoEF) of the three participating states.

75. The Bio Diversity Act is implemented through which of the following institutional mechanism

- i) National Biodiversity Authority.
- ii) State Biodiversity Boards .
- iii) Biodiversity Management Committees .

Choose the appropriate code

- a) I, ii only
- b) ii, iii only
- c) I, iii only
- d) All the above.

Solution d

The BD Act is implemented through a three-tier institutional mechanism: National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs) and Biodiversity Management Committees (BMCs). The NBA is an autonomous body that performs facilitative, regulatory and advisory functions for

the Government on biodiversity related issues.

76. To which state the following mangrove sites belongs too?

- i) Mahanadi
- ii) Subernarekha
- iii) Devi
- iv) Dhamra

Choose the appropriate option.

- a) Odhisa
- b) West Bengal
- c) Andhra Pradesh
- d) Gujarat.

Solution a

The Ministry accords high priority to the conservation and management of mangroves and coral reefs in the country. Cent per cent central assistance extended to all the coastal states/union territories, who so request, for implementation of their approved Management Action Plans (MAPs) which comprise 'Core' and 'Ancillary' activities. Besides, the Ministry also supports R&D activities with emphasis on targeted research on mangrove and coral biodiversity, its management and various aspects of pollution in these areas. The Government has identified 38 mangrove and 4 coral reef sites throughout the

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country for intensive conservation and management of mangroves and coral reefs.

The identified mangrove sites of Odisha

1. Bhaitarkanika

2. Mahanadi

3. Subernarekha

4. Devi

5. Dhamra

Please add the below question

77. Which of the below wetland was in news recently where poaching is a major threat to the wetland?

- a. Wular
- b. Loktak
- c. Pong dam
- d. Ashtamudi

ANSWER (c) -

<http://www.tribuneindia.com/news/himachal/cctv-cameras-installed-to-check-poaching-of-birds-in-pong-dam/511363.html>

78. Regarding India integrated coastal management project, which of the following is **correct**?

- 1) It is assisted by world bank
- 2) The society of integrated coastal management is the nodal agency
- 3) It is implemented through out India.

Options

- A) 2 and 3
- B) 1 and 3
- C) 1 and 2
- D) All the above

Answer- C)

Explanation: India Integrated Coastal Zone Management Project

- To conserve, project and manage the coastal and marine environment, the Ministry is implementing the India ICZM Project with the World Bank assistance.

- For the implementation of the project the Ministry has established a Society of Integrated Coastal Management (SICOM) as nodal body under the Society Registration Act, in Delhi.

- **The ICZM Project is being implemented as pilot investments in the coastal states of Gujarat, Odisha and West Bengal.**

- National activities are implemented through SICOM along with monitoring of activities carried out by three selected states.

- The project has four implementing agencies-MoEF at the national level with lead responsibilities, and the Departments of Forests and

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Environment (DoEF) of the three participating states.

79. With reference to National Adaptation Fund for Climate Change, which of the following **are true**

- 1) It is a Central Sector Scheme
- 2) NABARD is the implementing agency

Options

- A) 1 only
- B) 2 only
- C) Neither 1 and 2
- D) Both 1 and 2

Answer- D)

Explanation: **National Adaptation Fund for Climate Change**

- NAFCC was operationalised in 2015-16.
- The fund is meant to assist national and state level activities to meet the cost of adaptation measures in areas that are particularly vulnerable to the adverse effects of climate change.
- This scheme has been taken as Central Sector Scheme with the National Bank for Agriculture and Rural Development (NABARD) as National Implementing Entity (NIE).
- The overall aim of the fund is to support concrete adaptation activities which are not covered under ongoing

schemes of State and National Government that reduce the adverse affects of climate change facing community sector and states.

80. Which of the following require an appropriate mix of saline and freshwater and soft substrate like mudflats to enable it to grow and are not found in all coastal region?

Options

- A) Corals
- B) Mangrooves
- C) Sea grass
- D) Seaweeds

Answer: B)

Explanation: All coastal areas are not suitable for Mangroves, since the plants require an appropriate mix of saline and freshwater, and suitable soft substrate like mudflats to enable it to grow and perpetuate.

81. Regarding Wildlife Crime Control Bureau, **which of the following are true?**

- 1) It's a statutory body.
- 2) It's engaged in capacity building of the wildlife crime enforcement agencies for scientific and professional investigation.

- 3) It assists both central and state governments on issues relating to wildlife crimes.
- 4) It assists foreign authorities and international organisations in wildlife crime control.

Options:

- A) 1 and 2
B) 2 and 3
C) 2,3 and 4
D) All the above.

Explanation: D

Wildlife Crime Control Bureau

WCCB is a statutory multi-disciplinary body to combat organized wildlife crime in the country.

- The Bureau has its headquarter in New Delhi.
- It is mandated under the Wildlife (Protection) Act, 1972, to collect and collate intelligence related to organized wildlife crime activities and to disseminate the same to state and other enforcement agencies for immediate action so as to apprehend the criminals; assist foreign authorities and international organisations to facilitate coordination for wildlife crime control; capacity building of wildlife crime enforcement

agencies; assist state governments to ensure success in prosecution; and advise the GoI on issues relating to wildlife crimes.

82. Which of the following are **true** with regards to 'Project Elephant'.

1. It's a Centrally Sponsored Scheme
2. It covers elephants in wild and also domesticated elephants.
3. It also addresses man- animal conflict.

Options:

- A) 1 and 2
B) 1 and 3
C) 2 and 3
D) 1,2 and 3

Answer- D

Explanation: **Project Elephant**

- Launched in 1991-92 as a Centrally Sponsored Scheme
- Objectives: – to protect elephants, their habitat and corridors; to address issues of **man-animal conflict**; and welfare of domesticated elephants.
- Financial and technical support is being provided to major elephant bearing states in the country.
- Under the scheme, 100 per cent financial assistance is provided to the concerned state government for undertaking various activities for

scientific management of elephant habitats.

- Presently the project is being mainly implemented in 22 states.
- There are 29 notified and 2 proposed Elephant Reserve in the country (Khasi Hills Elephant Reserve in Meghalaya and Lemru Elephant Reserve in Chhattisgarh).

83. Regarding National Green Tribunal (NGT),

Which of the following are **true**.

- 1) It is a statutory body.
- 2) It is bound by procedure laid down by the code of civil procedure.
- 3) It is mandated to make endeavour for disposal of applications within six months of filing.

Options:

- A) 1 and 2
- B) 1 and 3
- C) 2 and 3
- D) 1, 2 and 3

Answer: B)

Explanation: National Green Tribunal

- Established in 2010 under the NGT Act, 2010.
- The NGT has been established for the effective and expeditious disposal of cases relating to environmental

protection and conservation of forests and other natural resources.

- It also hears cases relating to enforcement of any legal rights relating to environment and providing 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 is not bound by the procedure laid down under the Code of Civil Procedure, 1908**, but is guided by principles of natural justice.

- The Tribunal is mandated to make an endeavor for disposal of applications or appeals finally within six months of filing.

- Presently, the Tribunal has five places of sitting, including Principal Bench at Delhi.

- Pune, Kolkata, Bhopal and Chennai are four zonal Benches of sitting of the Tribunal.

- In addition, the Tribunal holds three circuit Benches at Shimla, Shillong and Jodhpur.

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84. The Mokukchung twin lakes are present in which of the following states?

- a) Arunachal Pradesh
- b) Nagaland
- c) Sikkim
- d) Himachal Pradesh

Answer: B)

Twin

Lakes, Mokukchung. Mokukchung is an important urban centre in the north of the northeastern Himalayan. State of Nagaland. District Mokukchung is home of the Ao Naga tribe. The district has six distinct hill ranges that run nearly parallel to each other.

85. Regarding Global Environment Facility (GEF), which are the following are **correct?**

- 1) It is a multilateral funding mechanism.
- 2) Its mandate covers areas identified by CoP of multilateral conventions namely CBD, UNFCCC, Stockholm Convention, UNCCD, Minamata convention.

Options:

- A) 1 only
- B) 2 only
- C) Neither 1 and 2
- D) Both 1 and 2

Answer: D)

Explanation: The Global Environment Facility (GEF) was established on the eve of the 1992 Rio Earth Summit to help tackle our planet's most pressing environmental problems. The GEF unites 183 countries in partnership with international institutions, civil society organizations (CSOs), and the private sector to address global environmental issues while supporting national sustainable development initiatives. Since 1992, the GEF has provided over \$17 billion in grants and mobilized an additional \$88 billion in financing for more than 4000 projects in 170 countries. Through its Small Grants Programme (SGP), the GEF has invested \$450million and leveraged similar levels of co financing supporting over 14,500 community based projects in over 125 countries. An independently operating financial organization, the GEF provides grants for projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, persistent organic pollutants (POPs), mercury, sustainable forest management, food security, sustainable cities.

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The GEF also serves as financial mechanism for the following conventions:

- Convention on Biological Diversity (CBD)
- United Nations Framework Convention on Climate Change (UNFCCC)
- UN Convention to Combat Desertification (UNCCD)
- Stockholm Convention on Persistent Organic Pollutants (POPs)
- Minamata Convention on Mercury

The GEF, although not linked formally to the Montreal Protocol on Substances that Deplete the Ozone Layer (MP), supports implementation of the Protocol in countries with economies in transition.

86. Regarding the Cartagena biosafety protocol (CBP) which of the following is **correct** ?

- 1) It was negotiated under the aegis of convention of biological diversity.
- 2) India is a party to the convention

Options

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

Answer- c)

- The CBP was negotiated under the aegis of the Convention on Biological Diversity (CBD) and adopted in 2000. India is a party to the Protocol.

- The Protocol came into force in 2003. As of date 170 countries are parties to the Protocol.

The main objective of the Protocol is to ensure safe transfer, handling and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity, taking into account risk to human health.

87. Regarding the wildlife crime control bureau which of the following **is true**?

- 1) It is a statutory body under wildlife (protection act), 1972
- 2) It helps to combat organised wildlife crime in the country

Options

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

Answer- c)

WCCB is a statutory multi-disciplinary body to combat organized wildlife crime

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in the country. The Bureau has its headquarter in New Delhi.

It is mandated under the Wildlife (Protection) Act, 1972, to collect and collate intelligence related to organized wildlife crime activities and to disseminate the same to state and other enforcement agencies for immediate action so as to apprehend the criminals.

88. Which of the following pollutants are monitored under the National Air quality index(AQI) ?

- 1) Lead
- 2) Ozone
- 3) Carbon dioxide
- 4) Ammonia

Options

- A) 1,2,3
- B) 1,3,4
- C) 1,2,4
- D) 1,2,3,4

answer- c)

- National Air Quality Index (AQI) has been launched in 2015.
- AQI is a tool loaded in the web portal of Central Pollution Control Board (CPCB) for public information on the status of ambient air quality of selected cities considering **eight Pollutants i.e., sulphur, dioxide, nitrogen dioxide,**

lead, ozone, PM10, PM2.5 carbon monoxide and ammonia for short

term (upto 24 hourly) norms as prescribed in the National Ambient Air Quality Standards (NAAQs-2009).

- The aforesaid air pollutants are monitored by Continuous Ambient Air Quality Monitoring stations (CAAQMs) by CPCB and state pollution air Control Boards.
- There are six AQI categories, namely good, satisfactory, moderately polluted, poor, very poor, and severe.
- Each of these categories is decided based on ambient concentration values of air pollutants and their likely health impacts.

The National AQI is a significant tool helping the country in decision supporting system as a part of e-Governance measure

89. Which of the **following is true** regarding Global Learning and Observation to Benefit the Environment (GLOBE) ?

- 1) It is a hands on international environmental science and education programme that brings students, teachers and scientists together to study the global environment.
- 2) Indian Environmental Society is an implementing agency for Globe in India.

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- 3) The goals of Globe are to enhance the environmental awareness of individuals throughout the world, to contribute to scientific understanding of the Earth and to help all students reach higher levels of achievement in science and mathematics.

Options

- A) 1 and 3
- B) 2 and 3
- C) 1 and 2
- D) All the above

Answer –D

- Global Learning and Observation to Benefit the Environment (GLOBE) is a hands on international environmental science and education programme that brings students, teachers and scientists together to study the global environment. Indian Environmental Society is an implementing agency for Globe in India.
- The goals of Globe are to enhance the environmental awareness of individuals throughout the world, to contribute to scientific understanding of the Earth and to help all students reach higher levels of achievement in science and mathematics. MoEFCC and US Government signed an agreement on 25th day of August 2000 to implement the Globe programme in India.

90.Match the following

- | | |
|--------------------------|--|
| 1) Minimata convention | A) protection of ozone layer |
| 2) Stockholm convention. | B) transboundary movement of hazardous waste |
| 3) Vienna convention | C) mercury |
| 4) Basel convention | D) persistent organic pollution |

Options

- A) 1-c,2-a,3-b,4-d
- B) 1-c, 2-d,3-a,4-b
- C) 1-b,2-d,3-c,d-a
- D) 1-b,2-a,3-d,4-c

answer- b)

- 1. Basel Convention on Control of Transboundary Movement of Hazardous Waste and their Disposal;
- 2. Rotterdam Convention on Prior Informed Consent Procedure for certain Chemicals and Pesticides in International Trade
- 3. Stockholm Convention on Persistent Organic Pollutants;
- 4. Strategic approach to International Chemicals Management; and
- 5. Minamata Convention on Mercury.

91.Regarding Forest survey of India, consider the following statements :

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Which of the following statement(s) is/**are correct?**

1)FSI is an organization under the MOEFF&CC is engaged in the assessment of the country's forest resources on a regular intervals.

2) It releases India state of forest report.

Options

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

Answer-c)

Established in 1981, the **Forest Survey of India** succeeded the 'Preinvestment Survey of Forest Resources' (PISFR), a project initiated in 1965 by Government of India with the sponsorship of FAO and UNDP.

The main objective of PISFR was to ascertain the availability of raw material for establishment of wood based industries in selected areas of the country.

Major Activities

- The major activities of FSI are Biennial Forest Cover Assessment using remote sensing technology, inventory of forest and trees outside forests (rural and urban areas), data processing, methodology design for

carrying out various types of survey and inventory, training and extension, and projects and consultancies.

FSI is involved in forest cover assessment of the country on biennial basis by interpretation of satellite data on a two-year cycle and presents the information in the form of 'India State of Forest Report'.

92.Which of the following has the highest of mangrove cover in the country

- a) Gujarat
- b) West Bengal
- c) Andaman and Nicobar
- d) Kerala

Answer- b) West Bengal

- Mangroves are plants that survive high salinity, tidal regimes, strong wind velocity, high temperature and muddy anaerobic soil-a combination of conditions hostile for other plants.
- These ecosystems constitute a symbiotic link or bridge between terrestrial and marine ecosystems.
- They are found in the inter-tidal zones of sheltered shores, estuaries, creeks, backwaters, lagoons, marshes and mud-flats.
- Mangrove vegetation has been reported in all the coastal states/UTs.

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- India is home to some of the best mangroves in the world.
- West Bengal has the maximum mangrove cover in the country, followed by Gujarat** and Andaman and Nicobar Islands.

93. Match the following mangrove sites

- | | |
|-------------------|-------------------|
| 1) Bhaitarkanika. | A) Andhra Pradesh |
| 2) Coringa | B) Tamil Nadu |
| 3) Pichavaram. | C) Karnataka |
| 4) Koondapur. | D) Odisha |

Options

- A) 1-D 2-A 3-B 4- C
 B) 1-C 2-A 3-D 4-B
 C) 1-D 2-C 3-B 4-A
 D) 1-D 2-B 3-C 4-A

answer- a)

Karnataka	Koondapur
West Bengal	Sundarbans
Odisha	Bhaitarkanika
Andhra Pradesh	1. Coringa 2. East Godavari 3. Krishna
Tamil Nadu	1. Pichavaram

94. Regarding the national tiger conservation authority consider the following :

Which of the following statement(s) is/**are correct?**

- a) It undertakes all India tiger estimation programme
 b) It takes counts once in 5 years
 c) Under its report Madhya Pradesh has the highest tiger population in the country
 d) Orang tiger reserve was the last to be notified

Answer- A)

The national tiger conservation authority conducts all India tiger estimation programme **once in 4 years. Karnataka has the highest tiger population** in the country and orang in Assam has the highest tiger density. **KamLang tiger reserve is the latest and 50th to be notified.**

95. Regarding the Comprehensive Environmental Pollution Index, consider the following

- 1) It is measured by Central pollution control board
 2) CEPI score of 70 and above is considered as critically polluted cluster tag

Which of the following statement(s) is/**are correct?**

- 1) 1 only

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- 2) 2 only
- 3) Both
- 4) Neither 1 nor 2

Answer- c)

Comprehensive Environmental Pollution Index (CEPI)

The Central Pollution Control Board (CPCB) has developed a Comprehensive Environmental Pollution Index (CEPI). CPCB has done a nation wide environmental assessment of Industrial Clusters based on CEPI and 43 such industrial clusters having CEPI greater than 70, on a scale of 0 to 100, has been identified as critically polluted.

The data refers to the Comprehensive Environmental Pollution Index (CEPI) scores of the critically polluted industrial clusters/areas. The index captures the various dimensions of environment including air, water and land.

Comprehensive Environmental Pollution Index (CEPI), which is a rational number to characterise the environmental quality at a given location following the algorithm of source, pathway and receptor have been developed.

96. Regarding the bureau of energy efficiency which of the following is

correct

- 1) It is a statutory body under ministry of power
 - 2) It develops the Energy Performance Index (EPI)
- Options

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

Answer- c)

The Bureau of Energy Efficiency is a statutory body under the ministry of power. It's a mandate under Energy conservation act, 2001. It develops the Energy Performance Index and rates buildings on a 1 to 5 scale based on energy efficiency.

97. Methaemoglobinaemia is associated with which of the following chemical ?

- a) Sulphites
- b) Nitrates
- c) Phosphates
- d) Mercury

Answer- b)

Some of the applied fertilizer is not used by the crop plants and is leached down into the soil and underground water aquifer.

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The chemical which usually leaches down is nitrate whose increased concentration in the drinking water may cause serious health problems.

Excess nitrates in water is harmful especially in bottle-fed infants in whom cause the disease, methaemoglobinaemia (also known as blue baby syndrome)

98. Which of the following is **correctly** matched

- 1) Nanda Devi National park- Meghalaya
- 2) Simlipal – Assam
- 3) Panchmarhi biosphere reserve- Madhya Pradesh

Options

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

answer- c)

Nandadevi national park is located in uttarakhand.

Simlipal in odisha

Panchmarhi in Madhya Pradesh

99. Which of the following has the highest forest per land area of the state?

- a) Sikkim
- b) Mizoram
- c) Karnataka

d) Madhya Pradesh

Answer- b)

Top five states with maximum forest cover as part of their area

Top five states / UTs with maximum forest cover as percentage of their own geographical area are as follows:

1. Mizoram (88.93%)
2. Lakshadweep (84.56%)
3. A&N islands (81.84%)
4. Arunachal Pradesh (80.30%)
5. Nagaland (78.21%)

100. Which of the following is **correct** about zoological survey of India?

1. It works under ministry of Environment, forest and climate change.
2. It prepares the red data book, flora and fauna of each state.

Options

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

Answer- A)

ZSI was established in 1916 with head quarters in Calcutta. It evolved from Asiatic Society of Bengal and Zoological section of Indian museum under Sir William Jones, currently under min of environment forest and climate change,

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it gives periodic review of status of
threaded and endemic species.

Prepares the red data book, fauna and
flora of states.

