



30 Days Revision Module Day 18 - Environment II (UPSC Prelims 2021)

1) Which of the following statements regarding the Environmental Impact Assessment (EIA) is/are correct?

1. It is being carried out under the mandate of the Environment (Protection) Act, 1986.
2. It is mandatory for various projects such as mining, thermal power plants, river valley, and infrastructure.
3. It is exempted for the biomass-based power plants up to 15 MW, power plants based on non-hazardous municipal solid waste and power plants based on waste heat recovery boilers.

Select the correct answer using the code given below.

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

Answer : d

- In 1994, for the first time under the Environment Protection Act, 1986, the EIA notification was formulated in India.
- It made environmental clearance mandatory for expansion, modernisation and setting up of new projects. Since then, EIA has been amended several times.
- The most important amendment happened in 2006. It makes it mandatory for various projects such as mining, thermal power plants, river valley, infrastructure (road, highway, ports, harbours and airports) and industries including very small electroplating or foundry units to get environment clearance.
- The amendments to EIA Notification of 1st December 2009 exempts environmental clearance process the biomass based power plants up to 15 MW, power plants based on non hazardous municipal solid waste and power plants based on waste heat recovery boilers without using auxiliary fuel.
- In 2020, the government redrafted it again to incorporate the amendments and relevant court orders issued since 2006, and to make the EIA "process more transparent and expedient.

2) Consider the following statements regarding the Green Ag Project, which was recently seen in the news.

1. The Indian government launched the Green-Ag Project to reduce emissions from agriculture and ensure sustainable agricultural practices.
2. The Green-Ag Project is funded by the Global Environment Facility, while the Department of Agriculture, Cooperation, and Farmers' Welfare is the national executing agency in India.
3. It will be implemented only in the states in the Gangetic Plains where the usage of fertilizer is high.

Which of the statements given above is/are correct?

- a. 1 only
- b. 1 and 2 only
- c. 2 and 3 only

d. 1, 2 and 3

Answer : b

- The Union government on July 2020, launched the Green-Ag Project in Mizoram, to reduce emissions from agriculture and ensure sustainable agricultural practices
- The Green-Ag Project is funded by the Global Environment Facility, while the Department of Agriculture, Cooperation, and Farmers' Welfare (DAC&FW) is the national executing agency.
- Other key players involved in its implementation are Food and Agriculture Organization (FAO) and the Union Ministry of Environment, Forest and Climate Change (MoEF&CC).
- The project will be implemented in Mizoram, Rajasthan, Madhya Pradesh, Odisha and Uttarakhand which includes non-Gangetic states as well

3) Why the Delhi region is facing the Air Quality Index sometimes in a positive manner or in the Moderate Category of Air Pollution?

1. The day-time high surface wind speed
2. The warmer temperature and elevated boundary layer height
3. The intermittent lifting of local dust
4. The stubble burning induced impact.

Select the correct answer using the code given below.

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

Answer : a

- According to the central pollution control board data and government-run monitoring agency SAFAR (System of Air Quality and Weather Forecasting and Research) the day-time high surface wind speed, warmer temperature and elevated boundary layer height have improved the ventilation and dispersion substantially and are influencing Delhi's AQI positively.
- The planetary boundary layer (PBL) height is a fundamental parameter characterizing the vertical extent of atmospheric mixing near the surface.
- The intermittent lifting of local dust under the prevailing meteorological conditions can be the dominating factor to influence the AQI adversely.
- The stubble burning in the neighbouring states results in adverse pollution levels as a favourable wind movement can bring the particulate matter to Delhi

4) The Hangenberg Crisis, which is frequently seen in the news, is related to which of the following?

- a. A crisis of depleting natural resources.
- b. It is a crisis caused by the Genetically Modified organisms
- c. An intense loss of species diversity caused by long-lasting ozone depletion.
- d. It is to find the age of biological evolution in the Earth.

Answer : c

- Explosion of a nearby star — occurred at between Devonian and Carboniferous periods — could have caused a mass extinction event that took place 359 million years ago.
- The Earth suffered an intense loss of species diversity that lasted for at least 300,000 years.
- The event is thought to have been caused by long-lasting ozone depletion, which would have allowed much more of the Sun's ultraviolet (UV) radiation to reach and harm life on Earth. It was called the Hangenberg crisis.
- The research, published in the Proceedings of the National Academy of Sciences on August 18, 2020, was supported by the Science and Technology Facilities Council and the Estonian Research Council.

5) Consider the following statements regarding the "Renewable Energy Certificates"

1. These are issued by the Central Government on the recommendation of the Bureau of Energy Efficiency (BEE).
2. The value of one certificate is equal to one metric tonne of oil equivalent.

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 : d

- Renewable Energy Certificates (RECs) are a type of environmental commodity intended to provide an economic incentive for electricity generation from renewable energy sources.
- Renewable Energy Certificates (REC) is a policy instrument to catalyze the development of renewable energy.
- It is a market based mechanism which will help the states meet their regulatory requirements (such as Renewable Purchase Obligations (RPOs)) by overcoming the geographical constraints on existing renewable potential in different states.
- These are issued by the power generating companies and regulated by Central Electricity Regulatory Commission.
- Each REC represents the environmental benefits of 1MWh of renewable energy generation.

6) The "Reykjavik declaration", recently seen in the news, is related to which one of the following?

- a. It is aimed at guiding joint action to prevent future health crises
- b. It is aimed at the protection of the Arctic Region
- c. Biodiversity Conservation is the main focus of this declaration
- d. It targets to enhance the vaccine access to the poor countries

Answer : b

- The Ministers representing the eight Arctic States, joined by representatives of the six Permanent Participant organizations of the Arctic Council, have gathered in Reykjavik, Iceland, at the conclusion of Iceland's second Chairmanship for the Twelfth Ministerial meeting of the Arctic Council, Reaffirming their commitment to maintain peace, stability and constructive cooperation in the Arctic.

7) The "Net Zero Producers Forum", recently seen in the news, is closely associated with which of the following objectives?

- a. To control the crude oil production for controlling the price rise
- b. To boost the vaccine production for controlling the pandemic
- c. To increase the food grains and pulses for preventing malnutrition and hunger
- d. To control climate change by the implementation of the Paris Agreement

Answer : d

- Saudi Arabia will join the United States, Canada, Norway, and Qatar in forming 'Net Zero Producers Forum' for oil and gas producers to discuss how they can support the implementation of the Paris Agreement on climate change.

8) To promote a decarbonised economy, at present, which of the following incentives is/are available to a solar manufacturer in India?

1. Performance Linked Incentive Scheme is provided to domestic solar companies.
2. 100% FDI is permitted in the renewable energy sector under automatic route.
3. Domestic Content requirement mandates the use of domestically manufactured solar photovoltaic cells.

Select the correct answer using the code given below.

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

Answer :

- A 4500cr performance Linked Incentive Scheme is provided to domestic solar companies.
- 100% FDI is permitted in the renewable energy sector under automatic route without government approval is there for solar sector.
- The domestic content requirement (DCR) category, the mandate for solar projects in India to utilize domestically manufactured solar modules and cells.

9) Chlordecone, 'Hexabromobiphenyl' and 'Pentachlorobenzene', sometimes seen in the news recently, are

- a. Persistent Organic Pollutants
- b. Bio-medical wastes
- c. Weedicides
- d. Plant growth promoters

Answer : a

- Union Cabinet has approved the Ratification of seven chemicals listed under the Stockholm Convention on Persistent Organic Pollutants (POPs).
- These are:

1. Chlordecone.
2. Hexabromobiphenyl.
3. Hexabromodiphenyl ether and Heptabromodiphenylether.
4. Tetrabromodiphenyl ether and Pentabromodiphenyl ether.
5. Pentachlorobenzene.
6. Hexabromocyclododecane.
7. Hexachlorobutadiene.

10) With reference to marine pollution, consider the following statements

1. More than 80% of marine pollution waste comes from land.
2. Nearly one-fifth of marine pollution is made up of different types of plastic.
3. A plastic bottle can last up to 450 years in the marine environment.
4. The dead zones in the ocean are regions where life can no longer sustain.

Which of the statements given above are correct?

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

Answer : c

- It is estimated that a staggering 80 per cent of marine pollution originates on land. Land-based pollutants – such as agricultural run-off and nutrients from sewage outflows - are contributing to ocean 'dead zones'.
- More than 220 million tonnes of plastic are produced each year. 60 -90% of marine pollution is made up of different types of plastic.

- A plastic bottle can last up to 450 years in the marine environment.
- Dead zones' are areas which can no longer sustain life because they have low or zero oxygen. There are now some 500 of these dead zones around the world.

11) Which of the following are the possible impacts of overgrazing of land by cattle?

1. Increases soil compaction
2. Increase in the amount of available phosphorus and nitrogen.
3. Increased invasion by Xerophytic plants and borrowing animals.
4. Land desertification.

Select the correct answer using the code given below:

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

Answer : d

- Overgrazing results in increased trampling of soil by livestock, which increases soil compaction and thus, decreases the permeability of the soil.
- Grazing has a significant positive effect on soil properties in that the soil moisture content, soil organic carbon concentration, soil total nitrogen concentration, soil available nitrogen, soil total phosphorus, and soil available phosphorus significantly increased with increased grazing pressure.
- Continued overutilization of land for grazing results in an increase in degradation (land desertification in long run) and this leads to poor soil conditions that only xeric and early successional species (xerophytic plants and borrowing animals) can tolerate.

12) Which of the following is not a quantitative pollutant?

- a. CO₂
- b. DDT
- c. Ozone
- d. Nitrogen Oxides

Answer : b

- **Quantitative Pollutants-** The substances which are already present in the environment, but are termed as pollutants when their concentration (quantity) increases in the environment. eg. CO₂ is present in the environment in greater quantity than normal and is hence termed as a quantitative pollutant.
- Other examples included ozone, NO_x, Sox etc.
- **Qualitative Pollutant-** The substances which are not normally present in the environment and are added by human beings and are pollutants by nature.
- Eg. insecticides, pesticides. In short, all manmade pollutants can be called as qualitative.

13) Global Stocktake which is frequently seen in news is related to which of the following entities?

- a. International Solar Alliance
- b. Paris Agreement
- c. Minamata Convention on Mercury
- d. Outer Space Treaty

Answer : b

- "Global Stocktake" - a moment every five years for all countries to pause and account for what has been achieved so far, and what must still be done, to achieve the goals of the Paris Agreement.

14) Listed below are some methods used to treat solid waste. Which of the following methods and its description are correctly matched?

1. Pyrolysis - Burning waste in large furnaces at high temperatures
2. Vermiculture - Biological process in which micro-organisms decompose degradable organic waste
3. Incineration - Combustion in absence of oxygen or under controlled atmosphere of oxygen
4. Composting - Decomposition of organic waste with the help of earthworms

Select the correct answer using the code given below:

- a. 1 and 3 only
- b. 2 and 4 only
- c. 1, 2, 3 and 4
- d. None of the above

Answer : d

- Pyrolysis - material is exposed to high temperature, and in the absence of oxygen goes through chemical and physical separation into different molecules.
- Vermiculture - the cultivation of earthworms, especially in order to use them to convert organic waste into fertilizer.
- Incineration - Waste destruction in a furnace by controlled burning at high temperatures.
- Composting - Biological process in which micro-organisms decompose degradable organic waste

15) Which of the following are some important pollutants released by coal based power plants in India?

1. Nitrogen oxides
2. Sulfur oxides
3. Particulate matter
4. Mercury
5. Uranium



SHANKAR
IAS PARLIAMENT
Information is Empowering

Select the correct answer using the codes given below.

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

Answer : d

All the given pollutants are released by coal based power plants.

16) 'Hothouse Earth Climate', which was sometimes in news refers to

- a. A condition where global temperatures will rise 2 to 3 degrees celsius higher than pre-industrial temperatures.
- b. A condition where global temperatures will rise 3 to 4 degrees celsius higher than pre-industrial temperatures.
- c. A condition where global temperatures will rise 4 to 5 degrees celsius higher than pre-industrial temperatures.
- d. State beyond which human efforts to reduce emissions will be increasingly futile

Answer : d

- Hothouse Earth is a term used to describe a scenario in which human activity causes a higher global temperature than at any time during the past 1.2 million years, due to a breakdown in the feedback loops that regulate the planet's temperature.

- Losing these safeguards would make warming largely beyond our control, no matter how much we subsequently reduced our greenhouse gas emissions.
- Ultimately, the authors of 'Worst case scenario' paper predicted things would start to stabilise at around 4-5C higher than pre-industrial times, with sea levels 60m higher than today.
- By this point, warming would "likely exceed the limits of adaptation and result in a substantial overall decrease in agricultural production, increased prices, and even more disparity between wealthy and poor countries".

17) Consider the following statements with respect to Carbon Credits :

1. Carbon Credits refers to the grants or loans by developed countries to developing countries for 'Green projects'
2. China is the biggest seller of Carbon Credits
3. The origins of Carbon Credits lie in the Kyoto Protocol

Which of the statements given above is/are **not correct**?

- a. 1 and 3 only
- b. 2 only
- c. 1 only
- d. None of the above

Answer : c

- A carbon credit is a permit or certificate allowing the holder to emit carbon dioxide or other greenhouse gases. The credit limits the emission to a mass equal to one ton of carbon dioxide. The issuance of carbon credits aims to reduce the emission of greenhouse gases into the atmosphere. It has its origins in Kyoto Protocol.
- A world bank study has mentioned that China followed by India are the biggest seller of carbon credits.

18) Consider the following statements with reference to Cyclopentane:

1. It is a Chlorofluorocarbon(CFC) with zero ozone depletion potential and zero global warming potential.
2. Ministry of Environment, Forests and Climate Change has recently proposed the foam industries to shift to Cyclopentane.

Which of the statements given above is/are correct?

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

Answer : b

- Cyclopentane is a hydrofluorocarbon with zero ozone depletion potential and low global warming potential.
- India is in the process of phasing out HCFC by 2030 as per the existing agreement signed by India in the Montreal protocol. HCFC is a commonly used refrigerant gas. It is also used in foam blowing agents, solvents, aerosols and fire extinguishers.
- MoEFCC has suggested that it will propose for the funding of foam industries to ease shift from using ozone-depleting Hydrochlorofluorocarbons (HCFC) to chemical Cyclopentane.

19) Consider the following statements regarding the National Clean Air Programme :

1. It aims to achieve a national level target of reducing PM_{2.5} and PM₁₀ concentrations by 20-30% between 2017 and 2024
2. It will be implemented throughout the country

3. It has been formulated under the Environment Protection Act, 1986
4. Central Pollution Control Board will be the implementing agency of the programme

Which of the statements given above is/are correct?

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

Answer : d

- The NCAP will be a mid-term, five-year action plan with 2019 as the first year. The tentative national level target of 20%-30% reduction of PM_{2.5} and PM₁₀ concentration by 2024 is proposed under the NCAP taking 2017 as the base year for the comparison of concentration.
- City specific action plans are being formulated for 102 non-attainment cities identified for implementing mitigation actions under NCAP. Overall monitoring will be by CPCB.
- It has been formulated under The Air (Prevention and Control of Pollution) Act, 1981

20) Consider the following statements with reference to petcoke, imports of which were recently banned for fuel use by government:

1. It has higher calorific value and is easier to transport and store.
2. It releases gases that contribute to global warming.
3. Cement industry is the highest consumer of petcoke in India.

Which of the statements given above is/are correct?

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



SHANKAR
IAS PARLIAMENT
Information is Empowering

Answer : d

- Petroleum coke, the bottom-of-the-barrel leftover from refining Canadian tar sands crude and other heavy oils, is cheaper and burns hotter than coal
- It contained 17 times more sulfur than the limit set for coal, and a staggering 1,380 times more than for diesel thus contributing to climate change.
- Cement followed by Limestone industries are largest users of Petcoke.