

Environment and Sustainable Development

1. "During the colonial period, the occupational structure showed lopsided movements." (2024)

(a) Do you agree with the given statement? Justify your answer with valid arguments.

Ans. Yes, The occupational structure during the colonial period showed lopsided movements as:

- Parts of Madras Presidency, Bombay and Bengal witnessed a decline in the dependence of the workforce on the agricultural sector with a commensurate increase in the manufacturing and the services sectors.
- There had been an increase in the share of workforce in agriculture in states such as Orissa, Rajasthan and Punjab.

(b) Elaborate the reasons owing to which the private sector was regulated under the Industrial Policy Resolution, 1956.

Ans. The Industrial Policy Resolution, 1956 regulated the private sector through a system of licenses. This policy aimed at achieving regional equality. The government made it relatively easier to obtain an industrial license, for industrial units to be established in economically backward areas.

Moreover, to ensure judicious use of resources owned by the private sector, licenses were needed for expanding/diversifying output by existing industrial units.

2. Read the following text carefully : (2024)

In order to address two major environmental concerns in India, viz. water and air pollution, the government set up the Central Pollution Control Board (CPCB) in 1974. This was followed by states establishing their own state level boards to address all the environmental concerns. They investigate, collect and disseminate information relating to water, air and land pollution, lay down standards for sewage/trade effluent and emissions. These boards provide technical assistance to governments in promoting cleanliness of streams and wells by prevention, control and abatement of water pollution, and improve the quality of air and to prevent, control or abate air pollution in the country.

These boards also carry out and sponsor investigation and research relating to problems of water and air pollution and for their prevention, control or abatement. They organize, through mass media, a comprehensive mass awareness programme for the same. The PCBs prepare manuals, codes and guidelines relating to treatment and disposal of sewage and trade effluents.



They assess the air quality through regulation of industries. In fact, state boards, through their district level officials, periodically inspect every industry under their jurisdiction to assess the adequacy of treatment measures provided to treat the effluent and gaseous emissions. It also provides background air quality data needed for industrial siting and town planning.

The pollution control boards collect, collate and disseminate technical and statistical data relating to water pollution. They monitor the quality of water in 125 rivers (including the tributaries), wells, lakes, creeks, ponds, tanks, drains and canals.

On the basis of the given text and common understanding, answer the following questions :

(a) State any two concerns owing to which the Central Pollution Control Board (CPCB) was established.

Ans. Two major concerns owing to which the Central Pollution Control Board (CPCB) was established were:

- Water pollution
- Air pollution

(b) Explain any two functions performed by the Central Pollution Control Board (CPCB).

Ans. Functions performed by the Central Pollution Control Board (CPCB) are:

- It investigates, collects and disseminates information relating to water, air and land pollution.
- It lays down standards for sewage/trade effluent and emissions.

(c) Elaborate any two strategies to ensure sustainable development as adopted by India.

Ans. In order to ensure sustainable development, following strategies are adopted by India:

- Use of wind energy: In areas where speed of wind is usually high, windmills are used to generate electricity without any adverse impact on the environment.
- Use of solar energy: With the help of photovoltaic cells/solar panels, solar energy can be converted into electricity. This technology is extremely useful for remote areas and is free from pollution.

3. Elaborate the concept of Externalities with the help of suitable example.

(2024)

Ans. Externalities refer to benefits/harms which are caused by one entity to another without being paid/ penalised for it.

For example: Newly developed public park

Previous Years' CBSE Board Questions

7.1 Environment : Definition and Functions

MCQ

- Identify, which of the following is incorrect function of environment?
(a) Supplies resources
(b) Land degradation
(c) Assimilates waste
(d) Provides aesthetic services (2023) (An)
- Central Pollution Control Board (CPCB) has identified _____ categories of large and medium industries as polluting industries.
(a) 15 (b) 17 (c) 19 (d) 13 (2020)

SA I (3 marks)

- "Ujjwala Yojana has been a game changer for rural India." State any three conventional fuels being targeted under the Ujjwala Yojana. (2020) (U)
- Define the following:
(a) Carrying capacity of environment
(b) Absorptive capacity of the environment. (2020) (R)

7.2 Sustainable Economic Development

MCQ

- Which of the following is not used as a strategy for Sustainable Development?
(a) Use of bio-gas
(b) Use of solar power
(c) Use of thermal power
(d) Use of hydel power (2020)

VSA (1/2 mark)

- Explain how the opportunity cost of negative environmental impact is high. (Term-II, 2021-22 C)
- Give two instances of
(i) Overuse of environmental resources
(ii) Misuse of environmental resources. (Term-II, 2021-22 C)
- State whether the following statement is true or false: "Smoke emitted by the industries leads to environmental pollution." (2020)

SA I (3 marks)

- Interpret the situation of earth as depicted in the given picture, with reference to current environmental challenges: (2023) (Ap)



- Interpret the given image with reference to current environmental conditions. (2023) (An)



- State the meaning of Environmental crisis and its impact on resources. (Term-II, 2021-22)
- "If the rate of resource extraction exceeds the rate of regeneration, it leads to a reduction in carrying capacity of the environment." Highlight any two consequences, stated in the given statement. (Term-II, 2021-22 C)
- Explain any two advantages of use of Non-Conventional Sources of Energy. (Term-II, 2021-22 C)
- Is environmental crisis a recent phenomenon? If so, why? (2021 C)
- Define the following:
(a) Bio-composting
(b) Sustainable Development. (2020) (R)

LA (6 marks)

- Read the following text carefully and answer the questions given below.
Green investment and sustainability are priorities in public policy. India has emerged as a global leader at the front of the climate change. India has pledged to seek solutions for the future.
Government schemes and policies such as Swachh Bharat Mission, Pradhan Mantri Awas Yojana, Smart Cities, Deen Dayal Upadhyay Gram Jyoti Yojana among other, all contribute towards achieving sustainable development goals.
The government has contributed to maintain economic growth by introducing and implementing various policies relating to sustainable development, climate change, energy efficiency and air pollution. Pradhan Mantri Ujjwala Yojana Scheme, has actively contributed to cleaner air. It has resulted in drastic reduction of respiratory diseases and ultimately death as per recent medical report.
The Jal Jeevan Mission was launched with the objective of achieving water security. We have seen 68 per cent decline in the size of population of various animal species and amphibian over the last 60 years. The issue of green house gases and rising temperature of the earth are a global concern. India is one of those countries that will be affected by the over 2 degree celsius rise in global temperature.
'India has already taken a log of step in the area of innovation and development of different production methodologies which are environmentally friendly in the long run.' -The Economic Times, Oct, 27, 2021

- (a) State and discuss any two steps involved in attaining sustainable development in India.
- (b) From the given text, state any two factors which challenged the carrying capacity of the environment. (Term-II, 2021-22) (Ap)
17. Comment upon the following statements:
- Traditional knowledge and practices are still applicable in ensuring sustainable development.
 - A well-structured rural banking system is important for the development of a nation. (2021 C)

CBSE Sample Questions

7.1 Environment : Definition and Functions

VSA (2 marks)

1. "Pesticides are chemical compounds designed to kill pests. Many pesticides can also pose health risks to people even if exposed to nominal quantities". In the light of the above statement, suggest any two traditional methods for replacement of the chemical pesticides. (Term-II, 2021-22)

SA I (3 marks)

2. "If the rate of resource extraction exceeds the rate of regeneration, it leads to reduction in carrying capacity of the environment." Discuss the rationale of the given statement with valid reasons. (2020-21) (U)

MCQ

3. _____ is not a cause for environmental degradation.
(a) Waste management (b) Deforestation

- (c) Global warming (d) Guarding green cover (2022-23)

4. _____ is not the strategy for Sustainable Development.
(a) Use of bio-gas (b) Use of solar power
(c) Use of thermal power (d) Use of hydel power (2022-23) (R)

7.2 Sustainable Economic Development

SA I (3 marks)

5. Interpret the given picture on account of current environmental challenges.



(2022-23)

Detailed SOLUTIONS

Previous Years' CBSE Board Questions

1. (b) : Land degradation
2. (b) : 17

Related Theory

- ⇒ CPCB was set-up in 1974. This board specify benchmarks of the tolerable range of effluent and emissions. Also, they are spreading awareness among the masses for environmental pollution.
3. The conventional sources of energy causes environmental pollution, therefore the government have introduced the 'Ujjawala Yojana' as a game changer for rural India by providing free LPG gas cylinders (cleaner fuel) to rural household.
The three conventional fuels targeted under Ujjawala Yojana are :
- Agricultural waste and dried dung
 - Firewood
 - Coal

4. (a) Carrying capacity of environment : It implies that the resources extraction is not above the rate of regeneration of the resources and waste generated are within the assimilating capacity of the environment.
(b) Absorptive capacity of the environment : It means the ability of the environment to absorb degradation without causing environmental damage.

5. (c) : Use of thermal power

Commonly Made Mistake

- ⇒ Sustainable development does not mean a check on the existing pace of economic growth. It only means a judicious or optimum utilisation of resources and in a manner such that growth is sustained with inter-generational equity.
6. Opportunity costs of negative environmental impacts are high as:
(i) The intensive and extensive extraction of both renewable and non-renewable resources, compelled the

government to spend huge amounts on technology and research to explore new resources.

(ii) Global environmental issues such as global warming and ozone depletion also contribute to increased financial commitments for the government.

7. (i) Two instances of overuse of environmental resources are:

(a) extraction of groundwater in excess of the recharge capacity

(b) large scale overgrazing

(ii) Two instances of misuse of environmental resources are:

(a) Use of wood as a household fuel

(b) Industrial effluents dumped into rivers.

8. The given statement is true.

9. The given picture depicts the critical situation of our Earth because of human interferences.

(i) Global warming is a gradual increase in the average temperature of the earth's atmosphere as a result of the increase in greenhouse gases since the Industrial Revolution.

(ii) Much of the recent observed and projected, global warming is human-induced which led to increase in carbon dioxide and other greenhouse gases through the burning of fossil fuels and deforestation.

(iii) Adding carbon dioxide, methane and such other gases to the atmosphere with no other changes, will make our planet's surface warmer.

(iv) Some of the longer-term results of global warming are melting of polar ice with a resulting rise in sea level and coastal flooding; disruption of drinking water supplies dependent on snow melts; extinction of species as ecological niches disappear; more frequent tropical storms and increased incidence of tropical diseases, like COVID 19 pandemic.

10. The given picture depicts sustainable development which mean 'Development that meets the need of the present generation without compromising the ability of the future generation to meet their own needs'.

(i) Environment and economy are interdependent and they need each other. Hence, development that ignores its repercussions on the environment will destroy the environment that sustains life forms.

(ii) Sustainable development is, in this sense, a development that meets the basic needs of all, particularly the poor majority, for employment, food, energy, water, housing, and ensures growth of agriculture, manufacturing, power and services to meet these needs.

11.

Environmental Crises refers to a situation when the environment is not able to perform its third vital function of sustenance of life, i.e. There exists and immense pressure and burden on its 'load carrying capacity' due to human practices.

Environmental crisis impacts the resources adversely:

1. It leads to a situation where the rate of resource extraction is more than the rate of resource regeneration, i.e. resources are used faster than they are replenished.

2. The intensive and extensive extraction of both renewable and non-renewable resources leads to exhaustion of some vital resources and we are compelled to spend an increased amount on technology and research to explore new resources.

So, the resources we exploited and their reserves are depleted due to overuse and misuse.

Hence, environmental crisis generally arise out of increasing population of developing countries and affluent production-consumption standards of developed nations leading to pollution, excessive waste generation and resource depletion.

[Topper's Answer, 2022]



12. Two consequences of such a situation are:

- (i) Global warming, which may lead to the melting of polar ice and an eventual rise in sea level.
- (ii) Other environmental problems like Ozone depletion, may cause serious threats to living organisms (sustenance of life).

13. Two advantages of the use of non-conventional sources of energy are:

- (i) Cleaner energy - Such sources of energy are eco-friendly in nature.
- (ii) Cost-effective - Energy generation from such sources has lower maintenance costs.

14. Yes, it is a recent phenomenon. In the early days, demand for environmental resources was less than their supply. In other words, the rate of resource extraction was less than the rate of regeneration of resources. Hence environmental problem did not arise. But with population explosion and with advent of industrial revolution and increasing urbanisation, demand for resources is more than their supply. Shortage of supply is because of overuse and misuse of resources. It is a reversal of supply-demand relationship.

15. (a) Bio-composting : It refers to the process of converting organic waste of various types into natural manure.

(b) Sustainable Development : It refers to the development process that meets the needs of present generation without compromising on the ability of the future generations to meet their respective needs.

16. (a) Two steps involved in attaining sustainable development in India are :

- (i) Pradhan Mantri Ujjawala Yojana scheme has

contributed cleaner air and resulted in drastic reduction in respiratory diseases.

(ii) Government schemes such as Swachh Bharat Mission, Pradhan Mantri Awas Yojana, Smart Cities, etc. are all contributing towards achieving sustainable development goals.

(b) Factors which challenge the carrying capacity of the environment are:

- (i) Rise in temperature of Earth,
- (ii) Issue of greenhouse gases,
- (iii) Decline in the size of population of various animals species and amphibians.

17. (i) The given statement holds valid grounds as traditionally, Indian people have been following environment friendly practices. They have been more a component of the environment and not its controller. For ages our agriculture system, healthcare system, housing, transport etc. were knitted with steps to protect and preserve the environment. Only recently we have

drifted away from the traditional systems and caused large-scale damage to the environment. We must look back and work in the direction of reconnecting to the traditional knowledge and practices to ensure sustainable development.

(ii) Mahatma Gandhi once said that the real progress of India did not mean simply the growth and expansion of industrial urban centres but mainly the development of villages. Growth of the rural economy depends primarily on infusion of capital, as the time gestation between crop sowing and realisation of income after production is quite long. Informal sources of credit exploited small and marginal farmers leading to debt-trap. Thus, the expansion and promotion of rural banking is important for the development of a nation.

CBSE Sample Questions

1. (a) The traditional practices can help in controlling contamination without the use of chemical fertilisers, as follows:

(i) Neem trees and its by products are a natural pest-controller, which has been used since ages in India. Recently, the government promoted the sale of Neem coated urea as a measure of natural pest control.

(ii) Large variety of birds should be allowed to dwell around the agricultural areas, they can clear large varieties of pests including insects. (2)

2. The environment is able to perform its functions uninterruptedly so long as the demand for these functions is within the carrying capacity of the environment. This means that the resources are not extracted beyond the

rate of their regeneration.

If there is a disequilibrium (demand being more than supply), the environment fails to replenish itself and it will lead to environmental crisis. Thus, to maintain a healthy environment, the carrying capacity of the environment must be valued and respected. (3)

3. (a) : Guarding green cover (1)

4. (c) : Use of thermal power (1)

5. The given image indicates towards the environmental challenge of 'global warming'. Global warming is a gradual increase in the average temperature of the earth's lower atmosphere as a result in the increase of greenhouse gases.

The statement given, 'we are running out of time, act now before it's too late' represents the urgency of actions to be taken to control the situation. Various studies have shown that global warming is causing rise in sea level, loss of coastal land, increase risks of floods etc. (3)