

# ECONOMICS

**CLASS XI**

**CHAPTER SEVEN**

**ENVIRONMENT AND SUSTAINABLE  
DEVELOPMENT**

# **ECONOMICS**

## **CHAPTER 7 - ENVIRONMENT AND SUSTAINABLE DEVELOPMENT**

### **1. What is meant by environment?**

It refers to the sum total of all surroundings of a living organism which includes biotic and abiotic factors. Biotic factors comprise all living creatures, while abiotic consists of non-living things like air, water, land, etc.

### **2. What happens when the rate of resource extraction exceeds that of their regeneration?**

The function of an environment is to sustain life by providing the necessary ingredients for survival, such as sunlight, water, air and soil. If the resources of the environment are extracted at a more rapid pace than its regeneration, we will lose the balance required to sustain life, and ultimately, it will lead to the breakdown of species.

### **3. Classify the following into renewable and non-renewable resources.**

**(i) Trees (ii) fish (iii) petroleum (iv) coal (v) iron-ore (vi) water**

Renewable sources are trees and fish.

Non-Renewable sources are coal, Iron-ore and petroleum.

### **4. Two major environmental issues facing the world today are\_\_\_\_\_ and\_\_\_\_\_.**

Global warming and ozone depletion.

### **5. How do the following factors contribute to the environmental crisis in India? What problem do they pose for the government?**

**(i) Rising population**

**(ii) Air pollution**

**(iii) Water contamination**

**(iv) Affluent consumption standards**

**(v) Illiteracy**

**(vi) Industrialisation**

**(vii) Urbanisation**

**(viii) Reduction of forest coverage**

**(ix) Poaching**

**(x) Global warming.**

**(i) Rising Population**

A rise in population leads to the depletion of natural resources in the form of deforestation for the purpose of shelter. Depletion of resources leads to ecological imbalance. Government should devise preventive measures to check the population explosion.

**(ii) Air Pollution**

Air pollution means the absence of fresh air for breathing, it can also mean contamination of air. Various pollutants contribute towards air pollution, such as CO<sub>2</sub>, SO<sub>2</sub>, and CH<sub>4</sub>. Various health issues are caused by air pollution, which includes respiratory and cardiovascular problems. Government should implement policies to reduce greenhouse gas emissions and search for alternative sources of energy.

**(iii) Water Contamination**

Water pollution is also one of the leading causes of death from diseases such as hepatitis, cholera, etc. Dumping of waste in water bodies results in pollution, and improper sanitation leads to the spread of contaminants and pathogens. The government should install more water purifier machines in order to provide clean water and also promote the importance of sanitation in rural areas.

**(iv) Affluent Consumption Standards**

Affluent consumption has put stress on the environment. The wastes generated are beyond the capacity of absorption, and the resources are becoming extinct, which results in an environmental crisis. The government should spend on researching resources that are environmental-friendly.

#### **(v) Illiteracy**

A literate population will utilise the available resources judiciously with minimum waste by becoming aware and developing skills to utilise the resources. Lack of knowledge and skills will lead to over-exploitation of the resources. The government, therefore, should educate people about the proper utilisation of resources.

#### **(vi) Industrialisation**

Industrialisation is essential for the development of a nation, but one downside is that it reduces the green cover of the earth, i.e., it causes deforestation. To obtain rapid results, natural resources are used at a rapid pace which causes harm to the environment. These activities disturb the ecological balance. Government should be more careful and prevent unnecessary depletion of natural resources in order to maintain balance with nature.

#### **(vii) Urbanisation**

Urbanisation also leads to deforestation and causes soil pollution, along with a reduction in rainfall. Rapid urbanisation is reducing the area for farming, and in future, it will cause a huge ecological imbalance, and it will be difficult for humans to survive without food. So government should provide measures for promoting green cover and stop the expanding population explosion.

#### **(viii) Reduction of forest coverage**

As the forest coverage decreases, soil loses its holding capacity leading to the washing of nutrients and deforestation. Deforestation leads to low oxygen levels and less rainfall, soil erosion and rises in CO<sub>2</sub> levels. Thus, some efforts need to be taken by the government to restore the greenery and maintain ecological balance.

#### **(ix) Poaching**

Poaching is an act of killing, capturing or hunting animals. Poaching poses a grave risk of disturbing the balance in nature. Thus, more steps need to be taken to conserve wild animals and their habitat by setting up national parks.

### **(x) Global warming**

Global warming is the effect of a sustained increase in global temperature, which is caused due to deforestation and environmental pollution. Greenhouse gas emission is the main culprit. Global warming leads to variations in seasonal temperature and rises in sea level by the melting of polar ice. Government should check the level of CO<sub>2</sub> emissions and adopt greener methods.

## **6. What are the functions of the environment?**

The functions of the environment are as follows:

1. Environment provides the essential sources for survival like water, air and soil and minerals. These natural resources can be mixed with other resources from the environment to produce resources which are essential for survival.
2. It provides the factors that are critical for life to survive.
3. Waste is generated due to production and consumption, and the environment absorbs this waste.
4. It provides beauty to the man and improves the quality of life.

## **7. Identify six factors contributing to land degradation in India.**

The following factors contribute towards land degradation in India:

1. When agents such as strong winds or floods remove the upper layer of soil, it is called soil erosion. The top layer contains essential nutrients like nitrogen, potassium and phosphorus. Erosion of this layer reduces land productivity.
2. Water logging causes the salinity and alkalinity of the soil. Waterlogged in the top layer absorbs nutrients from the soil and reduces its fertility.
3. The growing population has an ever-increasing demand for space, and thus, deforestation occurs, which causes soil erosion and reduces soil fertility.

4. The practice of shifting cultivation by small farmers and marginal farmers result in soil being eroded of nutrients.

5. Extensive use of fertilisers has contributed to the reduction of soil fertility and quality.

6. Due to the overgrazing of livestock in grasslands, it is slowly turning into a desert.

**8. Explain how the opportunity costs of negative environmental impact are high.**

Whenever the lands are extracted at a rapid pace which is greater than its regeneration, the carrying capacity of the environment declines. In such a situation, the environment does not perform its full function, which will result in a crisis. For such a situation, there should be new alternatives which are eco-friendly resources, in order to avoid a crisis in the environment. An imbalance in the environment brings about diseases, which may be air or water-borne, which will increase the expenses. The cost of managing diseases and finding alternative resources are the opportunity costs associated with the environment. These costs are high, which confirms the statement that opportunity costs of negative environmental impact are high.

**9. Outline the steps involved in attaining sustainable development in India.**

The following steps are involved in attaining sustainable development in India:

1. To control the population explosion, India has taken various steps, which include providing education and awareness on birth control methods.

2. Using eco-friendly fuels like CNG and LPG will reduce CO<sub>2</sub> emissions, which will be beneficial for the environment.

3. India has an abundance of solar and wind power, which can reduce energy expenses. It will help in sustainable development.

4. Recycling waste products also helps to sustain the environment. Waste generated from households can be used as manure. Banning the use of plastic bags is a great step toward reducing the environmental pollution.

5. Penalising vehicle owners and industries for emitting high amounts of smoke, along with high taxes and fines, have led to a reduction in pollution.

6. Using input-efficient technology has resulted in higher production and productivity and lesser use of resources which enhances growth opportunities for India.

**10. India has abundant natural resources. Substantiate the statement.**

India has an abundance of natural resources, which consists of fertile soil, rivers, green forests, high mineral deposits and mountains. Indo-Gangetic Plains are the most densely populated, fertile cultivated plains in the world, which stretch from the Arabian Sea to the Bay of Bengal. Cotton cultivation is most favourable in the black soils of the Deccan plateau. The iron reserves of India are around 20% of the total iron reserves in the world. Hydel energy is attained through the hydel power plants. A wide variety of flora and fauna make India a rich country in terms of bio-diversity. All these facts point towards the fact that India has abundant natural resources.

**11. Is the environmental crisis a recent phenomenon? If so, why?**

The environmental crisis is indeed a recent phenomenon. Before industrialisation, there was less demand for environmental resources as there was less population, and it was able to sustain itself with the resources; it was a surplus for the existing population. As there was less exploitation of resources, so the rate of regeneration was much faster. But in the present day, due to population explosion, rapid urbanisation and over-exploitation of natural resources, nature is unable to replenish the stocks, which is causing an ecological imbalance that is *putting* pressure on the environment's carrying capacity, giving rise to an environmental crisis.

**12. Give two instances of**

**(a) Overuse of environmental resources.**

**(b) Misuse of environmental resources.**

**(a) Overuse of environmental resources.**

**1. Drying of rivers due to the creation of flood storage reservoirs and irrigation activities.**

**2. Large-scale deforestation due to the growing requirement of land is leading to soil erosion and also reducing the fertility of the soil.**

**(b) Misuse of environmental resources.**

**1. The discharge of domestic sewage, waste from thermal power plants and industrial wastes into rivers is causing water pollution.**

**2. Using wood as a source of fuel for cooking and other purposes results in deforestation**

**13. State any four pressing environmental concerns of India. Correction for environmental damages involves opportunity costs. Explain.**

The four most pressing environmental concerns of India are water pollution, air pollution, deforestation and soil erosion. In addition to global problems like global warming, ozone depletion, greenhouse gas reduction, etc., are also threats to India's environmental concerns. The rapid and extensive use of both renewable and non-renewable sources has led to exploring alternative resources, which require high investment. These alternative resources are also high on maintenance. An imbalance in the environment brings about diseases which may be air or water-borne, which will increase the expenses. The cost of managing diseases and finding alternative resources are the opportunity costs associated with the environment. Therefore, correcting environmental damages involves opportunity costs.

**14. Explain the supply-demand reversal of environmental resources.**

Since the start of civilisation and till the rise of industrialisation, the rate at which natural resources were extracted was far less than their rate of regeneration. That means demand fell short of the supply of resources. At that time, nature exploitation was within limits. But, coming to the present-day scenario, the population has seen a great surge, and there has also been rapid progress in industries which means the rate of extracting natural resources is higher than the rate of regeneration therefore, the demand was far more than the supply. This created an ecological imbalance and brought about a crisis which can be referred to as the supply-demand reversal of environmental resources.



### **15. Account for the current environmental crisis.**

The increase in population and consumption of all natural resources has placed an excessive burden on the environment. Reserves are getting exhausted, but the regeneration is not on par which is causing a reduction in the carrying capacity of the environment, resulting in ecological imbalance. The current environmental crisis includes ozone layer depletion and global warming. Global warming is the result of an increase in greenhouse gases (particularly CO<sub>2</sub>), and it is increasing the temperature of the earth's atmosphere, causing the melting of polar ice, which is making water levels in the sea levels increase. Also, ozone layer depletion is caused due to excessive use of CFCs (chlorofluorocarbon). Increased UV radiation will cause skin cancer in individuals. Therefore, these factors are the most concerning of all issues currently.

### **16. Highlight any two serious adverse environmental consequences of development in India. India's environmental problems pose a dichotomy- they are poverty induced and, at the same time, due to affluence in living standards. Is this true?**

Development has led to the following environmental consequences in India, which are air pollution and land degradation.

**Air pollution:** Air pollution is a major problem in India, with lots of industrial smoke, agricultural waste burning and exhaust fumes from automobiles. All these contribute to increasing the levels of harmful gases in the atmosphere, which is a major cause of global warming.

**Land Degradation:** Gradual and consistent loss of land fertility is known as the degradation of land. It is usually caused by factors such as soil erosion, the salinity of soil, deforestation and shifting cultivation which is practised by farmers.

Deforestation resulted from population explosion and poverty. People in rural areas, in order to earn a livelihood, cut down trees which resulted in deforestation and soil erosion. The widespread urbanisation also is robbing the nature of its green cover. More and more buildings are getting built, which is reducing the trees and causing harm to the environment. If both these factors are studied carefully, we see that the environmental problems are due to the combined effect of poverty and affluent living standards.

## **17. What is sustainable development?**

Sustainable development is referred to as the process of economic development that will meet the target of providing the basic needs of the current generation without compromising on the needs of future generations. It is aimed at developing both the present and future. In other words, it is achieving a quality of life without compromising the quality of life for future generations.

## **18. Keeping in view your locality, describe any four strategies of sustainable development.**

Sustainable development can be achieved using these strategies:

1. Using eco-friendly fuels like CNG and LPG will reduce CO<sub>2</sub> emissions, which will be beneficial for the environment.
2. India has an abundance of solar and wind power, which can reduce energy expenses. Using these sources will help in sustainable development.
3. Recycling waste products also helps to sustain the environment. Waste generated from households can be used as manure. Banning the use of plastic bags is a great step for reducing environmental pollution and attaining sustainable development.
4. Using input-efficient technology has resulted in higher production and productivity and lesser use of natural resources, which enhances growth opportunities for India.

## **19. Explain the relevance of intergenerational equity in the definition of sustainable development.**

Handing over of earth to its future generations in good condition becomes an obligatory requirement. It can only be achieved if resources are judiciously utilised. Overutilisation will result in reducing the productive capacity of future generations. Economic development that is being generated will not remain the same for the upcoming generations as the resources will be reduced. Sustainable development aims at the economic development of the present while not making a compromise on the resources available for future generations. It is welfare for both the present and future. It is achieved by the optimum use of resources so as to save for future generations and maintain inter-generational equity.

## FILL IN THE BLANKS

1. Economic growth without \_\_\_\_\_ is possible.  
(**Economic development**)
2. In modern times the \_\_\_\_\_ is an economic leader  
(**entrepreneur**)
3. Industrial development increases \_\_\_\_\_  
( **urbanization**)
4. Per capita income is \_\_\_\_\_ divided by the total population.  
( **national income**)

## MCQS QUESTION NA D ANSWERS

1. **Which of the following statements is correct about achieving sustainable development?**
  - a. Sustainable development can be achieved by restricting the usage of renewable resources
  - b. Sustainable development can be achieved by controlling the growth rate of world's population
  - c. Sustainable development can be achieved by controlling the menace of pollution
  - d. All of the above

**Answer: d**

2. **Which of the following statements is true about global warming?**
  - a. Global warming has led to large scale deforestation
  - b. Global warming has led to a rise in the sea levels

- c. Global warming has led to a rapid increase in the population across several countries
- d. Global warming has led to a huge amount of waste generation

**Answer: b**

**3. Which of the following was the main purpose behind setting up the Central Pollution Control Board (CPCB)?**

- a. The main purpose of the Central Pollution Control Board was to regulate air pollution
- b. The main purpose of the Central Pollution Control Board was to regulate water pollution
- c. The main purpose of the Central Pollution Control Board was to regulate noise pollution
- d. The main purpose of the Central Pollution Control Board was to regulate deforestation

**Answer: a**

**4. Which of the following statements is correct?**

- a. Tides are a conventional source of energy
- b. Sun is a conventional source of energy
- c. Wind is a conventional source of energy
- d. Dried dung is a conventional source of energy

**Answer: d**

**5. Which of the following statements about the ozone shield is accurate?**

- a. Ozone shield is found in the troposphere
- b. Ozone shield is found in the stratosphere
- c. Ozone shield is found in the exosphere
- d. Ozone shield is found in the mesosphere

**Answer: b**

**6. Which of the following statements is true about the ozone layer depletion?**

- a. Ozone layer depletion leads to the problem of skin cancer within humans
- b. Ozone layer depletion results in a lower amount of production of phytoplankton
- c. Ozone layer depletion hampers the growth of the terrestrial plants

- d. All of the above

**Answer: d**

**7. Which of the following statements is true?**

- a. Ozone depletion is one of the main reasons for soil erosion
- b. Deforestation is one of the main reasons for soil erosion
- c. Air pollution is one of the main reasons for soil erosion
- d. Global warming is one of the main reasons for soil erosion

**Answer: b**

**8. Which of the following statements is true?**

- a. The Central Pollution Control Board has identified twenty five industrial categories as significantly polluting
- b. The Central Pollution Control Board has identified thirty five industrial categories as significantly polluting
- c. The Central Pollution Control Board has identified forty five industrial categories as significantly polluting
- d. The Central Pollution Control Board has identified seventeen industrial categories as significantly polluting

**Answer: d**

**9. Which of the following statements is true?**

- a. Economic growth is the modern concept for development
- b. Political growth is the modern concept for development
- c. Sustainable growth is the modern concept for development
- d. Social growth is the modern concept for development

**Answer: c**

**10. Which of the following statements is correct?**

- a. Global warming is a result of ozone layer depletion
- b. Global warming is a natural phenomenon
- c. Global warming is defined as the rise in the average temperature of the surface of the Earth
- d. Global warming is simply another term that scientists use to describe the greenhouse effect

**Answer: c**

**11. Which of the following statements is correct?**

- a. The Chipko movement was about banning the use of chlorofluorocarbon, bromine and chlorine compounds
- b. The Kyoto protocol was about banning the use of chlorofluorocarbon, bromine and chlorine compounds
- c. The Appiko movement was about banning the use of chlorofluorocarbon, bromine and chlorine compounds
- d. The Montreal protocol was about banning the use of chlorofluorocarbon, bromine and chlorine compounds

**Answer: d**

**12. Which of the following statements about climate change is true?**

- a. Plantation can be a preventive measure to tackle climate change
- b. The usage of cycles instead of bikes or cars for transportation can be a preventive measure to tackle climate change
- c. The usage of organic products can be a preventive measure to tackle climate change
- d. All of the above

**Answer: d**

**13. Which of the following statements gives the correct meaning of absorptive capacity?**

- a. Absorptive capacity is defined as the ability of our environment to absorb degradation
- b. Absorptive capacity is defined as the method of resource generation that is within the assimilating capacity of our environment
- c. Absorptive capacity is defined as the average number of organisms that are living within a given environment
- d. Absorptive capacity is defined as the minimum population that is currently surviving in the world

**Answer: a**

**14. Which of the following is true about the environment?**

- a. The environment includes only biotic factors
- b. The environment includes only abiotic factors
- c. The environment includes both biotic and abiotic factors
- d. The environment includes neither biotic nor abiotic factors

**Answer: c**

**15. Which of the following statements is true?**

- a. The United Nations Conference on Climate Change was held in India in the year 1997
- b. The United Nations Conference on Climate Change was held in Japan in the year 1997
- c. The United Nations Conference on Climate Change was held in China in the year 1997
- d. The United Nations Conference on Climate Change was held in Canada in the year 1997

**Answer: b**