

NCERT SOLUTIONS CLASS-11 ECONOMICS

CHAPTER- 9

NCERT Solutions for Class 11 Economics for chapter 9 Environment and Sustainable Development

Exercises

Question 1. What is meant by environment?

Answer.

Environment means nature in its capacity as a store of resources and as an absorber/clearing agent of harmful by-products of the production system. Environment refers to our surroundings, total planetary inheritance and all the resources. This includes all biotic and abiotic elements. Biotic elements are all the living organisms in the eco-system – birds, animal, plants, fisheries, forests, etc. Abiotic elements are non living elements and physical parts of the environment which affect the living organisms like sunlight, mountains, rivers, etc.

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

Answer -

Environment performs 4 vital functions

- (i) It supplies us with resources, both renewable and non-renewable
- (ii) It sustains life by providing genetic and bio-diversity
- (iii) it assimilates waste, and
- (iv) it provides aesthetic services like scenery, etc. Environment performs all these function till the demand for these functions is within its carrying capacity. This means that rate of resource extraction is below the rate of regeneration of resources. If the rate of extraction of resources exceeds the rate of regeneration of resources, then environment is not able to perform its above mentioned functions, which leads to environmental crisis.

Environmental crisis refers to the situation of environment not being able to sustain the bio-diversity (extinction of rare species of flora & fauna) and its incapability in providing the supply of resources (reserves of precious resources getting over or extinct).

A major threat arises when waste is generated beyond the absorptive capacity of the environment. Absorptive capacity refers to ability of the environment to absorb the degradation.

Question 3. Classify the following into renewable and non-renewable resources

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

Answer

Renewable Sources: (i) trees, (ii) fish and (vi) water

Explanation: Resources which can regenerate themselves quickly once used and do not go extinct once they have been fully utilised are known as renewable resources.

Non-renewable Sources: (iii) petroleum, (iv) coal and (v) iron ore.

Explanation: Resources which can't replenish themselves and go extinct once used fully are known as non-renewable resources.

Question 4. Two major environmental issues facing the world today are _____ and _____.

Answer.

Two major environmental issues facing the world today are globalwarming and ozone depletion.

Question 5. How do the following factors contribute to the environmental crisis in India? What problems 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

(ix) coverage

(x) Poaching

(xi) Global warming.

Answer.

(i) Rising population

India has world's second largest population in the world, after china. It comprises of 17% of the world population and for that 2.5% of geographical area of the world. The high concentration of population & livestock in small surface area and moreover enormous pressure of economic activities exert large amount of pressure on limited resources of the economy. Rising population is leading to reduction in average land per individual in India.

The challenges posed by government due to rising population are

1. Rapidly reducing forest cover or deforestation
2. Rising demands for basic necessities
3. Increasing poverty in the economy
4. Declining exhaustible resources, etc.
5. Need to introduce population control measures.

(ii) Air pollution

In India, air pollution is becoming a major environmental issue, which needs to be addressed immediately. Major contributors towards air pollution are industries and thermal power plants, burning of agricultural waste, firewood and carbon emission from vehicles. India being a developing nation with rising population has an increased demand for vehicles; in a span of last 60 years, countries vehicle population has risen from 3 lakh in 1951 to more than 21 crores. India is ranked amongst the 10 most industrialised nations of the world; Central Pollution Control Board (CPCB) ranks 17 categories of industries as significantly contributing towards air pollution.

Air pollution leads to respiratory disorders, cardiovascular problems, asthma, etc which affects the health status of the country. Government has to incur hefty expenditure to raise awareness regarding the rising air pollution. It has to devise and implement policies to control air pollution. Recently, Government of Delhi introduced odd-even rule for vehicles, rationed registration of heavy personal vehicles to control air pollution. Government also has to implement pollution regulation norms for the industries. How simple might this seem but in reality it takes a lot of effort from government to do the above task.

(iii) Water contamination

Untreated industrial, sewage and agricultural waste is discharged and disposed in the water bodies. This waste leads to imbalance in chemical properties of water bodies which makes them contaminated and unfit for drinking and other related purposes. This water due to modified properties is unsafe for use as it can do a serious harm to health directly or indirectly.

Problems faced by government due to water contamination are:

1. Declining health status of population
2. Increase in diseases like cholera, hepatitis, diarrhea etc which are primarily caused due to contaminated water.
3. Increased need to devise and implement policies which regulate the disposal of waste into water bodies.

(iv) Affluent consumption standards

Affluence refers to economic well being. To achieve affluent standards of consumption, there is a trade-off between environmental degradation and development. In a scenario, to achieve economic well being of all the people environment degradation is inevitable. Affluent consumption standards take a heavy toll on environment so government has to keep a balance in its policies between environmental degradation and economic development.

(v) Illiteracy

In India, there is a widespread illiteracy especially about the peculiar effects of human actions on the environment. In rural areas, people do not account for effects of their activities on environment. This awareness regarding environment only comes through education. Majority of population is not able to educate themselves due to the clutters of poverty.

Challenges posed to government due to illiteracy are

1. Lack of infrastructure in rural areas to provide education.
2. Huge costs involved in spreading awareness regarding the issues.

(vi) Industrialisation

In a modern society, industry plays a very critical role in development of an economy. This modernised living standard comes at a cost; this cost is degradation of environment. Industrialisation also encourages population expansion and urbanization. As a consequence to all these air is getting polluted, water bodies are getting contaminated, forest cover is reducing, vehicular pollution is increasing, and some essential non-renewable resources are getting depleted.

Government faces issues like how to control the adverse impact of rapidly increasing industrialisation as it is essential for economic development. Government needs to strike a balance between development and environmental degradation.

(vii) Urbanisation

Urbanisation has disrupted most of the earth's landscape and decreased the cover of wildlife habitat. Urbanisation and deforestation have led to extinction of rare species. Urbanisation enforces pressure on small pieces of lands and leads to land degradation; it leads to reduction in land per individual ratio, rapid reduction of available resources, reduction of agricultural farmland and depletion of forests.

Problems faced by government due to urbanisation are

1. Incapability to encourage cottage & small scale industries in rural areas.
2. Ineffectiveness of state mechanism to implement policies that generate rural employment.
3. Rural employment policies are inefficient in providing an incentive to regulate rural-urban migration.

Question 6. What are the functions of environment?

Answer.

Functions of environment are:

(i) Suppliers of resources

Environment supplies us with all the resources – both renewable and non-renewable resources. Renewable resources are those which can regenerate themselves and do not get exhausted. This means that there is a continuous supply for production activities in the economy.

(ii) Sustainer of life

Environment acts as a sustainer of life by providing genetic and bio diversity. It provides conditions for living organisms which are necessary for them to survive.

(iii) Provider of aesthetic beauty

Environment provides us aesthetic beauty like scenery, beautiful views, etc. Due to generosity of environment only we get see surreal views of mountains, oceans, beaches, forest, etc.

(iv) Assimilates waste

The disposable waste generated by human activities gets assimilated in the environment.

Question 7. Identify six factors contributing to land degradation in India.

Answer.

The Factors contributing to land degradation in India are:

1. Vegetation loss due to increased deforestation
2. Extraction of firewood and fodder up to unsustainable limits
3. Shifting cultivation & irregular crop rotation
4. Encroachment into forest land, Over grazing and forest fires
5. Unprecedented use of chemical fertilizers, pesticides, etc
6. Unplanned and mismanaged irrigation systems.

Other than these reasons there are other reasons also like

1. Extraction of groundwater beyond recharge capacity.
2. Agricultural dependent poor people.
3. Open access resources.
4. Inadequate soil conservation measures

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

Answer.

In midst of achieving economic development, the environmental aspect of economic activities has often been compromised which has led to extinction of resources and generation of waste beyond the absorptive capacity of the environment. This has compelled us to spend humungous amount on improving technology and research & develop techniques to explore new resources or ways to use or explore existing resources in an efficient manner. Due to degraded environment there has been a steep rise in health costs. Health costs are related to deteriorating health status due to declining air and water quality leading to diseases'. Raising awareness about the degraded environment also involves incurring huge promotion costs. Thus the opportunity costs of negative environmental impact are high.

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

Answer.

The steps involved in attaining sustainable development in

India are:

1. Substituting the use of firewood, dung cake or other biomass with subsidized LPG, Gobar gas in rural areas to reduce the household pollution.
2. Use of cleaner fuel such as CNG in public transport systems.
3. Use of wind power for generation of electricity.
4. Setting up of plants to generate electricity through solar energy.
5. Generating electricity through turbines of mini hydel plants which use mountainous perennial streams.
6. Crop rotation or shifting agriculture techniques to save the soil from degrading.
7. Use of bio compost instead of chemical fertilisers to retain the quality of soil.
8. Setting up of rainwater harvesting plants to raise the groundwater levels.

Question 10. India has abundant natural resources – substantiate the statement.

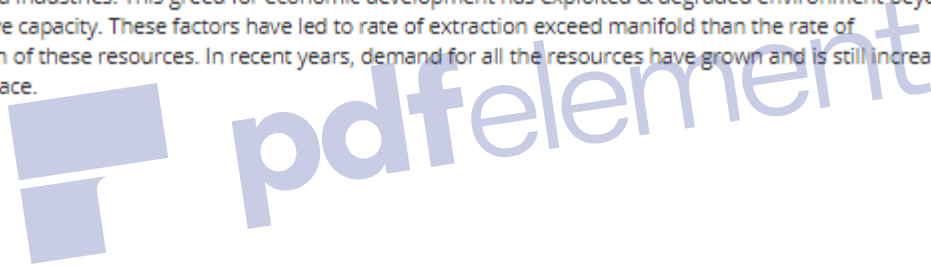
Answer.

India is much diversified in terms of availability of natural resources, different quality of soils, rivers, tributaries, distributaries, different variety of forests, large deposits of precious minerals, stones, metals, wide agricultural plains, never-ending ocean stretches, youngest mountain ranges of the world, etc. There are large reserves of coal, iron ore, copper, bauxite, diamonds, gold, lead, uranium, lignite, zinc and other metals in Chhattisgarh, Jharkhand, Rajasthan and other parts of the country. North and North-East part of the country has one of the youngest mountain range of the world which has some of the densely populated tropical rain forest. Indo-Gangetic plain is one of the most fertile, densely populated and intensively cultivated area of the world. 23.7% of land is covered with uneven distribution different varieties of forest which are inhabited by some of the rare species as well as the common ones. Large natural rivers have been source of fresh water from old-times. Vast ocean stretches have played an important role in expansion of trade & commerce.

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

Answer.

Yes, as we look through history of economic development, it comes to our surprise that environmental crisis is a very recent phenomenon. This phenomenon has arisen just due to massive industrialization, population explosion and ever increasing human wants which have pressurized the available natural resources. Population explosion has acted as a catalyst; it has triggered industrialization and urbanisation to boost up the desire for modern lifestyle. If we go through the industrialization literature, we come across that it is just a 200 year old concept. It led to development of nations by which it improved the living standards of the people. Improved living standards led to a sharp change in demographics of the country and rise in demand of the goods. Sharp demographic shift catered to population explosion and rising demand for goods led to increased demand for resources via industries. This greed for economic development has exploited & degraded environment beyond its absorptive capacity. These factors have led to rate of extraction exceed manifold than the rate of regeneration of these resources. In recent years, demand for all the resources have grown and is still increasing on a rapid pace.



Question 12. Give two instances of

(a) Overuse of environmental resources

(b) Misuse of environmental resources.

Answer.

Overuse of environmental resources

1. Use of non-renewable resources like coal & gas beyond a sustainable limit have led to their rapid depletion, they have still not been substituted by renewable resources.
2. Unplanned irrigation systems & flood control facilities have led to drying up of several rivers.

Misuse of environmental resources.

1. Excessive mining beyond the permissible amounts due lack of strict legal actions.
2. Excessive & unplanned exploitation of ground water exceeding the regeneration capacity.

Question 13. State any four pressing environmental concerns of India. Correction for environmental damages involves opportunity costs - explain.

Answer.

Four Pressing environmental concerns of India are: Air Pollution, Land degradation, loss of biodiversity and Solid waste management.

Correction of environmental damages involves opportunity cost refers to the huge amount of expenditure which are necessary and can't be avoided in process of correcting the damages. This expenditure refers to cost incurred in researching and developing new technology which can be used instead of the existing technology to use the available resources efficiently and economically. For example: In Delhi, to control air pollution government is planning to implement CNG as the only fuel to be used in vehicles. This policy involves huge costs and some major problems. If this policy is implemented then everyone with a non CNG vehicle has to get his vehicle changed to a CNG one or get a CNG kit fitted. Further, there are very less number of CNG pumps in the city which wouldn't be able to cater to the huge demand. Then there are many technical issues which are to be taken care of. Implementing this policy would involve huge amount of expenditure.

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

Answer.

In the early days of civilization, there was huge supply of natural resources but a very small demand for them. But, as we have moved forward with development process; civilizations have become more developed and this equation has reversed. With rapid industrialisation and population explosion the supplies of resources have gone down while the demand for resources have increased manifold. This is known as the supply-demand reversal of environmental resources.

Question 15. Account for the current environmental crisis.

Answer.

Environmental crisis occurs when the environment is not able to perform its necessary functions such as sustenance of life, assimilation of waste and supply resources due to lack of carrying capacity. Lack of carrying capacity refers to over exploitation of resources above the rate of regeneration. In the current scenario of world, rapid industrialization, rising living standards, affluent consumption and rising population have pressurized the available natural resources. These factors are also rapidly exploiting the available resources at a pace exceeding their rate of regeneration. If we keep moving at this pace, environment will lose its potency to perform its natural functions. In the current scenario, world is facing serious environmental issues. Some of them are air pollution, ozone depletion, acid rains, climate change, deforestation, global warming, loss of biodiversity, water pollution, etc. One of the most important issues which is in the limelight is climate change. Glaciers and polar ice have started melting due to rising temperatures and climate is becoming volatile. There has been a major initiatives by United Nations to organise World Climate Summit in different parts of the world to discuss the global environment issues and what shall be the global remedial policy for them.

Question 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?

Answer.

Two serious adverse environmental consequences of development in India are

1. Air Pollution: In India, air pollution is becoming a serious environmental issue in the urban areas of the country. Industrial emission and vehicular emission are seen as the major contributor to this. Carbon emissions, green house gas emissions are deteriorating the health standard of the country. Recently, Delhi government launched an odd- even vehicle policy to curb the problem of air pollution.

2. Land degradation: Land degradation is also emerging as a major consequence of development. It is due to deforestation, improper management of land, use of chemicals in agricultural activities, unplanned irrigation systems, etc. These factors lead to reduction in quality of soil, increase in harmful chemicals, soil erosion, etc.

India's environmental problems pose a dichotomy because in rural areas of the country environmental issues arise due to poverty – people have to rely on forest wood and agricultural waste as the fuel for cooking and other related activities; And due to lack of water distribution facilities and awareness about sanitation, daily chores take place at the banks of open water bodies which provide water for drinking. In urban areas, environment issues occur due to maintaining of affluent living standards – industrialization, urbanisation contribute massively towards environment degradation. Further, land gets degraded due over-utilisation, water bodies get polluted due to sewage and industrial waste, air quality degrades and natural resources are getting depleted.

Question 17. What is sustainable development?

Answer.

According to United Nation Conference on Environment and Development (UNCED), Sustainable development is 'Development that meets the needs of present generation without compromising the ability of the future generation to meet their own needs'. Basically, sustainable development is using the available resources carefully, without undermining the right of future generation to gain benefits from the same.

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

Answer.

Sustainable development refers to use of available resources keeping in mind requirement of those resources by our future generation.

In view of my locality, strategies for sustainable development are

1. Constructing under-ground tanks to harvest rain water which helps in raising the ground water level.
2. Ensuring no wastage of electricity and power; by switching of the lights when not in use, switching off vehicles on red- light, etc.
3. Using efficient transportation techniques like car pooling, public transport, etc instead of private vehicle.
4. Setting up waste treatment plants for industrial waste and sewage to protect water bodies from contamination.

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

Answer.

Sustainable Development means satisfying needs of present generation without compromising the requirement of future generation to achieve a certain standard of living. This definition strictly emphasizes on two words – 'needs' and 'future generation.' This shows that how sustainable development is trying to allocate resources equally between different generations. This equality of resources can be achieved through raising awareness in present generation regarding the requirement of future generation. Sustainable development's definition is about focusing on welfare of present society as well as future ones. Present generation needs to judiciously use the available resources without undermining the right of future generations.