

### Environment and Environmental problems

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#### PART- II : GEOGRAPHY

#### TEXTUAL QUESTIONS AND ANSWERS

#### EXERCISE

**Q 1.** Write in your own words the meaning of environment.

**Ans:** The term ' environment' means the condition existing around an organism which include biotic elements such as microbes, plants, animals and large mammals, and abiotic elements such as land, water, air, and all other lifeless elements which through their interaction create the necessary conditions for life. From a geographical point of view, environment refers to the four spheres of the earth, i.e lithosphere, hydrosphere, atmosphere, and biosphere, . The condition created by the interaction of these four spheres is called an environment.

According to the geographer Peter Haggett, " environment is the outcome of interaction among land,water, air and life."

**Q 2.** Mention some of the biotic and elements of environment.

Ans: The elements of environment are:

(i) Biotic elements: All plants and animals ranging from microbes to large mammals.

(ii) Abiotic elements : Land, water, air and all lifeless elements.

**Q 3.** Write the meaning of lithosphere.

Ans : Lithosphere means the land surface of the earth which consists of rocks, soil, minerals, etc. It covers mountains, hills, plateaus, plains, valleys and coasts over the continents. Hydrosphere ,atmosphere and biosphere individually and collectively determine the characteristics of the lithosphere and how it the course of time.

**Q 4.** What are the features included in the hydrosphere?

Ans: Hydrosphere refers to the waterbodies of the earth which include the following feature:

(i) seas

(ii) Oceans

(iii) Rivers

(iv) lakes

(v) wells, etc.

**Q 5.** Write about the composition of the atmosphere.

**Ans:** The gaseous layer which surrounds the earth upto a height of 480 kms from the earth's surface is known as atmosphere. It mainly consists of 78.80% nitrogen, 20.94% oxygen, 0.035% carbon dioxide, 0.93% argon, and other gases like hydrogen etc.

**Q 6.** Given an outline of the extent of the biosphere.

**Ans:** Biosphere covers those parts of the earth's environment where life exists, i.e lithosphere, atmosphere and hydrosphere. This area includes the earth's surface, down to a few meters from the earth's surface, the lower stratum of the atmosphere and most parts of the seas and oceans.

**Q 7.** Discuss briefly the relation among the four major components of environment.

**Ans:** Environment consists of four components namely lithosphere, atmosphere, hydrosphere, and biosphere. There is close interdependence and interaction among these four components of the environment. In fact, they are interdependent on each other for their nature and existence. Different cycles of nature such as hydrological cycle, carbon cycle, nitrogen cycle, energy cycle, etc. Pass through all the four components. There is a close complex network of relationship among the various elements of these components. Any change that occurs in any one of the major components affects

the other three components of the environment. When atmosphere is affected by over radiation from the sun, it in turn affects the hydrosphere, lithosphere and biosphere. It leads to the melting of snow which in turn causes a rise in the sea level bringing a lot of changes in the coastal regions of the earth's surface. As a result, many regions of the lithosphere get submerged. Many of the microorganisms, flora and fauna that live on the lithosphere, hydrosphere and biosphere perish as a result of this overheating of the atmosphere. Cutting down of trees of the lithosphere leads to overabundance of greenhouses gases in the atmosphere leading to global warming which affects not only living organisms on the earth but also those

of oceans. Thus, it is evident that all the four components of the environment are closely connected and interdependent.

**Q 8.** Mention the major cause of environmental change.

**Ans:** Today the environment is changing both in term of space and time. The major causes of environmental. Change are the various anti-nature human activities such as urbanisation, industrialisation, expansion of transport and communication, shrinking of forest cover and wetlands, etc. These activities have profoundly affected all the four spheres. The spread of population and human activities to the mountainous and desert areas are causing rapid environmental changes there. Thus,

we can say that the primary cause for environmental in human activities.

Briefly , the major causes of environmental change are :

(i) Increase in population.

(ii) Industrialisation and urbanisation.

(iii) Increase of carbon-dioxide in the atmosphere.

(iv) Deforestation and decrease wetlands.

(v) Expansion of human activities in the mountainous and desert areas.

**Q 9.** Explain the meaning of environmental problem.

Ans:For a long time , there existed no environmental problem. This was because there existed a proper balance among the natural and Man-made elements. But as a result of the rapid growth of human population, spread of urbanisation, Industrialisation, deforestation, extensive use of fossil fuels, shrinking of wetlands, etc. ecological equilibrium that existed among the four spheres desertification, global warming, melting of snow, rise of sea level,etc. Since all these problems are linked to the environment, they are called environmental problems.

**Q 10.** Write geographical division of the environmental problems.

Ans: The geographical division of the environmental problems are.

(i) Local problem : An environmental problem which affects only a particular place or a small area so far as their genesis and spread are concerned is called a local environmental problem.e.g. land pollution created by a small -scale industry, water scarcity in winter due to shallowing of wetlands, bank erosion caused by a local river, etc.

(ii). Regional problem : Regional problem exists in a large region or more nations.e.g.flood problem in the state of Assam as a result of the overflowing of the Brahmaputra or the barak rivers, water population in vast industrial area, scarcity of underground water in a city, soil erosion in a basin, etc.

(iii) Global problem : The environmental issues that affect the entire world are termed as global problem. These problems need International efforts for solution and management. e.g. global warming which affects the atmosphere and thus has no geographical boundary.

**Q 11.** What is local environmental problem? Give examples

Ans: Refer to Answer of Questions No. 10 (i).

**Q 12.** Give two examples of regional environmental problem.

Ans: Do Your Self.

**Q 13.** Which problems are considered as global environmental problem?

Ans: Do Your Self.

**Q 14.** Mention the major environmental problems of the world.

Ans: The major environmental problems of the world are:

(i) Land, air, water and pollution

(ii) Desertification

(iii) Landslide warming

(iv) Global warming

(v) Artificial floods

(iv) Increase in sea level, etc.

**Q 15.** Give the meaning of the pollution.

Ans: The process of contamination of the environment by harmful substance is called pollution. It is caused by adding or dumping of pollution into the environment. Zinc, sulphur dioxide, carbon monoxide,

etc . are some major pollution of the environment and air and water pollution causes harm to human beings and all life forms.

**Q 16.**What is water ? How does it occur?

**Ans:** The process by which natural state or quality of water gets changed on addition or passing through of harmful items such as chemical substance, particles, radiation, microbes,etc. is known as water pollution.it occurs when there are human settlements, industries, agricultural field,etc. near the waters sources, from where waste get mixed with the water, making it polluted.

**Q 17.** Write a short note on land pollution.

**Ans :** Today land pollution has reached an alarming rate in most countries of the world. Land is being polluted mainly due to human activities.

Land loses its natural quality and fertility when it comes into contact with certain chemical substance, poisonous metals, Industrial wastes, radioactive wastes, urban wastes, etc. Agricultural pesticides, land filling and increasing scale of deforestation, application of chemical fertilisers, irrigation, insecticides, etc.for higher agricultural production also pollute land.For all these regions,land pollution in most countries has become a major problem today and a lot of measures are being undertaken to rectify the problems.Use of underground water in the fields degardes

the natural soil quality. Application of insecticides and weedicides in the fields destroy useful life forms with the harmful ones and hence polluting the land by changing its natural mining of coal and petroleum also pollutes the land.

**Q 18.** Write how air is polluted.

**Ans:** Air pollution has become one of the serious environmental problems of today. Atmosphere mostly consists of gases such as nitrogen (78.08%), oxygen (20.94%), and carbon dioxide (0.035%). By maintaining a definite proportion, increases substantially, or if other solid, liquid or gaseous substances are added to the atmosphere, it disturbs the atmospheric balance which result in air pollution. Such pollution cause harm to biotic elements.

Air pollution is caused by :

(i) Natural factors : Air is polluted by the smoke, ashes and gases that comes out in a volcanic eruption .e.g. 15-20 million tonnes of sulphur dioxide ( $\text{SO}_2$ ) was emitted in the eruption of Mount pinatubo in philippines.

(ii) Human factors :

a) Industrialisation and urbanisation.

b) Increases vehicular traffic and natural explorations.

c) Increased use of fossil fuels.

All these human activities have led to the addition of harmful gases like carbon monoxide, nitrous oxide, hydrocarbon, sulphur dioxide, etc. to the air, leading to its pollution.

**Q 19.** What is a desert? Give the definition of desertification.

**Ans :** The parts of the earth where evaporation is high and rainfall is scarce, making it difficult for plants, animals and human beings to survive are known as desert. They cover around 20% of the world's land surface.

Desertification is defined as the process of the spread of the desert conditions to the peripheral areas. Currently about 35% of the world's land surface is affected by the process of desertification. According to a meeting held in Nairobi in 1977 by the United Nations, desertification is "the diminution or destruction of the biological potential of the land leading ultimately to desert-like conditions."

**Q 20.** Mention the cause of desertification.

**Ans:** The causes of desertification are :

(i) Natural factors: (a) Drought: It affects productivity of land and growth of natural vegetation, thereby leading to desertification.

(b) Global warming : Increase in temperature due to global warming makes the desert environment more dry, accelerating desertification.

(ii) Human factors : (a) Human activities : It includes overgrazing, expansion of deserts.

(b) population growth: Growth in population has increased pressure in the desert and semi-desert areas which creates expansion of deserts.

**Q 21.** Is it possible to control desertification ?

Ans : Yes, through a challenging task, it is possible to control desertification through measures like afforestation, rainwater harvesting, prevention of soil erosion, construction of artificial irrigation systems, extension of canal system into semi-arid regions, etc. Since it is not one Nation's problem, it must be tackled on a global warming will definitely lead to a decrease in the process of desertification.

**Q 22.** What is global warming? Mention its causes.

Ans: Global warming has become the most important environmental problem of our world today. The Increase of temperature over the earth's surface as a result of emission of greenhouse gases into the atmosphere is known as global warming. The main cause of global warming is emission of greenhouse gases.

Gases that can trap the energy reflected back by the earth's surface, viz carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitro oxide (N<sub>2</sub>O), water vapor, etc. increase the atmospheric temperature. These gases are called greenhouse gases and constitute about 0.1% of the total volume of atmospheric gases. Variation in composition of such gases has increased the atmosphere's temperature leading to global warming.

Among all the greenhouse gases, the role of carbon dioxide gas has been most significant, as it alone has increased by 30% in the atmosphere in the last 150 years. After industrial revolution, use of fossil fuels and deforestation greatly increased. This has led to a rise in carbon dioxide gas in the atmosphere. Increase in the proportion of chlorofluorocarbons (CFC) has also increased in the atmosphere, all contributing to global warming.

**Q 23.** What are probable consequences of global warming?

**Ans:** The consequences of global warming are:

(i) Increase in atmospheric temperature :

From the pre-industrial revolution era, average surface temperature has increased by 0.76°C and has been estimated to increase by 5.8°C in future.

(ii) Melting of snow in the polar areas: Increase in temperature by 2-3°C will cause melting of snow in the north and south polar areas.

(iii) rise of sea level: Melting of snowcaps will lead to rise in sea level. Rise in sea level by one meter will submerge 5 million sq.km. of coastal areas, many population island, deltas and coastal and coral islands.

iv) Change in growth and distribution of plants and animals.

(v) Decrease in crop output.

(vi) Expansion of desertification.

**Q 24.** Write how to control global warming.

Ans: Following measures should be taken to control global warming:

(i) Avoid cutting down of trees unless urgently required.

(ii) Controlling the high population growth rate.

(iii) Reducing the use of gadgets that release chlorofluorocarbons.

(iv) Reducing the use of fossil fuels such as mineral oil, natural gas, etc.

(v) Increase use of non-conventional source of energy such as solar, wind, biomass energy, etc.

**Q 25.** Is there any environmental problem in your own locality? If yes, then explain their causes and indicate some measures for their solution.

Ans:Do Your Self.