

ENVIRONMENT AND SUSTAINABLE ECONOMIC DEVELOPMENT

STUDY-NOTES

- **Environment– Definition:** It includes all the biotic and abiotic factors that influence each other. While all living elements - the birds, animals and plants, forests, fisheries etc. are biotic elements, abiotic elements include air, water, land etc. Rocks and sunlight are all examples of abiotic elements of the environment.
- **Function (Importance/ Significance) of environment:**
 1. Environment offers resource for production: resources here include both renewable and non renewable resources. Renewable resources are those which can be used without the possibility of the resource becoming depleted or exhausted. That is, a continuous supply of the resource remains available.
 2. Enhances quality of life
 3. Environment sustains life by providing genetic and bio diversity
 4. Environment assimilates waste: This implies that the resource extraction is not above the rate of regeneration of the resource and the wastes generated are within the assimilating capacity of the environment.
- **Problems related to Environment:**
 1. **Problem of pollution:** The intensive and extensive extraction of both renewable and nonrenewable resources has exhausted some of these vital resources and we are compelled to spend huge amounts on technology and research to explore new resources. Added to these are the health costs of degraded environmental quality - decline in air and water quality (seventy % of water in India is polluted) have resulted in increased incidence of respiratory and water-borne diseases. Hence the expenditure on health is also rising. To make matters worse, global environmental issues such as global warming and ozone depletion also contribute to increased financial commitments for the government. Thus, it is clear that the opportunity costs of negative environmental impacts are high. (i) Air pollution (ii) Water pollution (iii) Noise pollution
 2. Excessive exploitation of natural resources:
- **Deforestation:** “Deforestation refers to the removal or destruction of the forest cover of an area”.

Causes of Deforestation:

 - (i) It is caused by growing demand for wood other forest products by the industries
 - (ii) Increasing pressure of population
 - (iii) Industrialization leads to urbanization and urbanization induces deforestation
 - (iv) Construction of dams is another factor for deforestation.
- **Degradation of land:** “Degradation of land means loss of fertility of land”. Degradation of land is caused by the following factors. (i) Soil erosion (ii) Water logging (iii) Deforestation (iv) Excessive use of fertilizers.
- **Cause of environmental degradation:**

1. Population explosion	2. Poverty
3. Increasing urbanization	4. Rapid industrialization
5. Increasing use of insecticides, pesticides and chemical fertilizers	
6. Disregard to the civic norms	7. Multiplicity of transportation vehicles
8. Improper crop rotation	9. Poverty of the agriculture dependent people.
- **State of environment in India:** India supports approximately 17 % of the world’s human and 20 % of livestock population on a mere 2.5 % of the world’s geographical area. The high density of population and livestock in

the country results in loss of 0.8 million tonnes of nitrogen, 1.8 million tonnes of phosphorus and 26.3 million tonnes of potassium every year.

- **Our challenging issues are:** (i) Land degradation (ii) Loss of biodiversity (iii) Air pollution in urban areas (iv) Management of fresh water and (v) Management of solid waste.

- **Principal factors contributing to land degradation in India:**

- (i) Loss of vegetation due to deforestation
- (ii) Multiple cropping along with subsistence farming by small and marginal holders
- (iii) Excessive use of chemical fertilizers, insecticides and pesticides
- (iv) Low water - table
- (v) Soil erosion occurring due to floods, strong winds and other factor.

- **How to Save Environment?**

1. Social awareness
2. Population control
3. Afforestation campaign
4. Enforcement of environment conservation Act
5. Water management
6. Management of solid waste
7. Control over industrial and agricultural pollution
8. Improvement in housing

- **Global warming:** “Global warming refers to the phenomenon of sustained increase in global temperature due to environmental pollution and deforestation.”

- **Causes of Global warming:**

- (i) Burning of coal and petroleum products are sources of carbon dioxide
- (ii) Deforestation (increases the amount of carbon dioxide) Release of methane gas from animal waste.

- **Sustainable Development:** “Sustainable development is that process of economic development which aims at raising the quality of life of both present and future generations, without harming natural resources and environment”. The concept of sustainable development was emphasized by the United Nations Conference on Environment and Development (UNCED), which defined it as: ‘Development that meets the need of the present generation without compromising the ability of the future generation to meet their own Needs’ The Brundtland Commission emphasises on protecting the future generation. This is in line with the argument of the environmentalists who emphasise that we have a moral obligation to hand over the planet earth in good order to the future generation; that is, the present generation should bequeath a better environment to the future generation.

The present generation can promote development that enhances the natural and built environment in ways that are compatible with (i) conservation of natural assets (ii) preservation of the regenerative capacity of the world’s natural ecological system (iii) avoiding the imposition of added costs or risks on future generations.

Features of sustainable development:

1. Increase in per capita income and welfare over time
2. Rational use of natural resources
3. Check on pollution
4. Ability of future generations to fulfill their need.

- **Strategies for Sustainable Development:**

1. Use of Non-conventional Sources of Energy: India, as you know, is hugely dependent on thermal and hydro power plants to meet its power needs. Both of these have adverse environmental impacts. Wind power and solar rays are good examples of conventional but cleaner and greener energy sources but are not yet been explored on a large scale due to lack of technological devices.
2. LPG, Gobar Gas in Rural Areas: Households in rural areas generally use wood, dung cake or other biomass as fuel. This practice has several adverse implications like deforestation, reduction in green cover, wastage of cattle dung and air pollution. To rectify the situation, subsidised LPG is being provided. In addition, gobar gas plants are being provided through easy loans and subsidy. As far as liquefied petroleum gas (LPG) is concerned, it is a clean fuel -it reduces household pollution to a large extent. Also, energy wastage is minimised.

3. CNG in Urban Areas: In Delhi, the use of Compressed Natural Gas (CNG) as fuel in public transport system has significantly lowered air pollution and the air has become cleaner in the last few years.
4. Solar Power through Photovoltaic Cells: India is naturally endowed with a large quantity of solar energy in the form of sunlight. Plants use solar energy to perform photosynthesis. Now, with the help of photovoltaic cells, solar energy can be converted into electricity.
5. Mini – hydel Plants: In mountainous regions, streams can be found almost everywhere. A large percentage of such streams are perennial. Mini-hydel plants use the energy of such streams to move small turbines.
6. Input efficient technology
7. Integrated rural development
8. Use of environment friendly sources of energy
9. Manage the wastes
10. Shift to organic farming
11. Public means of transport
12. Awareness to conserve natural assets for, inter-generational equity.

QUESTION BANK

MULTIPLE CHOICE QUESTIONS

1. How many categories of industries have been identified by Central Pollution Control Board (CPCB) as significantly polluting?
 (a) Seventeen (b) sixteen (c) Both (a) and (b) (d) None of these
2. First Forest policy was adopted in
 (a) 1947 (b) 1952 (c) 1951 (d) 1966
3. National Forestry Action Plan was adopted in
 (a) 1990 (b) 1991 (c) 1992 (d) 1993
4. Accumulation of water causing a damage to land fertility is called
 (a) Water Logging (b) Land Degradation (c) Flood (d) All of these
5. In narrow sense, environment consists of
 (a) Air and Water (b) Soil (c) Trees and Plants (d) All of the Above
6. The concept of Sustainable Development was introduced in
 (a) 1990 (b) 1991 (c) 1987 (d) 1988
7. Rank of India in 2018 in Environmental Performance Index is
 (a) 177 (b) 169 (c) 187 (d) 188
8. Chipko movement is related to
 (a) Water pollution (b) Protecting Forests (c) Noise Pollution (d) Electricity
9. Environment Protection Act was introduced in the year _____
 (a) 1980 (b) 1982 (c) 1986 (d) 1990
10. _____ refers to a situation where the rate of resource extraction is not more than the rate of regeneration of the resource.
 (a) Absorption capacity (b) Carrying capacity (c) Environmental crisis (d) None of the above
11. Environmental crisis occur when there is _____
 (a) Overuse of resources (b) Misuse of resources (c) Both (a) and (b) (d) None of the above
12. Which of the following statements is incorrect?
 (a) Land degradation involves soil erosion and salinity of the soil
 (b) Excess production and consumption have made water an economic good
 (c) Opportunity costs of negative environmental impacts are low
 (d) All of the above

13. CPCB stands for _____
 (a) Central Pollution Committee Board (b) Central Pollution Control Board
 (c) Committee of Pollution Control Board (d) None of the above
14. CPCB was set up in _____
 (a) 1954 (b) 1964 (c) 1974 (d) 1984
15. CPCB has identified _____ industries as significantly polluting
 (a) 10 (b) 15 (c) 17 (d) 20
16. The term "Sustainable Development" was coined by _____
 (a) Tapas Mojumdar Committee (b) Brudtland Commission
 (c) Karve Committee (d) Mahalanobis Commission
17. Which of the following is not correct about Sustainable Development?
 (i) It deals with economic development which aims at raising the quality of life of people of present and future generations.
 (ii) It involves meeting the needs of present generation by compromising the needs of future generations
 (iii) It deals with rational use of natural resources.
 (iv) It involves sustained rise in real per capita and economic welfare
 (a) (i), (iii) and (iv) (b) (ii) only (c) (iv) only (d) (ii), (iii) and (iv)
18. _____ Refers to the excessive cutting down of trees or clearing out of forests.
 (a) Land Degradation (b) Soil Erosion (c) Deforestation (d) Afforestation
19. Which of the following is not used as a strategy for Sustainable Development?
 (a) Use of Biogas (b) Use of thermal power (c) Use of hydel power (d) Use of solar energy
20. Which of the following is not a benefit of Social Forestry?
 (a) To spread the vegetation cover on land (b) To encourage commercial production of raw material
 (c) Generate employment opportunities (d) None of the above
21. Which of the following is a component of environment?
 (a) Living elements only (b) Non-living elements only
 (c) Both (a) and (b) (d) None of these
22. Which of the following is not considered as an element of environment?
 (a) Air (b) Land (c) Weather (d) Electricity
23. Which of the following is a reason of noise pollution?
 (a) Domestic sewerage (b) Industrial waste (c) Industrial machines (d) Emission of gases
24. Which of the following is a cause of environmental degradation?
 (a) Population explosion (b) Increasing urbanisation
 (c) Rapid industrialisation (d) All of these
25. Sustainable development is that development which satisfies the need of:
 (a) present generation only (b) future generation only
 (c) both (a) and (b) (d) none of these
26. Which of the following is a necessary condition of sustainable development?
 (a) Increase in the quality of life (b) Reduction in the level of pollution
 (c) Conservation of the stock of natural capital (d) All of these
27. An increase in real income along with equitable distribution is called:
 (a) economic growth (b) economic development
 (c) sustainable development (d) none of these
28. Which of the following statements highlight the significance of environment?
 (a) It offers resources for production (b) It enhances quality of life
 (c) It sustains life (d) All of these

29. The basic problem related to environment is:
 (a) problem of pollution
 (b) problem of excessive exploitation of natural resources
 (c) problem of degeneration
 (d) both (a) and (b)
30. Which of the following factors contribute to air pollution?
 (a) Smoke emitted by industries
 (b) Poisonous gases emitted in the process of chemical treatment of the materials
 (c) Emission of gases by motor vehicles
 (d) All of these
31. Industrial waste streaming into the rivers contributes to:
 (a) air pollution (b) water pollution (c) land pollution (d) noise pollution
32. Principal cause of environmental pollution is:
 (a) population explosion (b) rapid industrialisation (c) increased urbanisation (d) all of these
33. Which of the following is the strategy for sustainable development?
 (a) Integrated rural development (b) Shift to organic farming
 (c) Output-efficient technology (d) Both (a) and (b)
34. From the set of facts given in column I and corresponding relevant fact given in column II, choose the correct pair of statement: Identify which of the following pairing is correct:

Column I

Column II

- | | |
|---------------------------------------|---|
| 1 Renewable resources | (i) Rocks and sunlight |
| 2 Biotic elements of the environment | (ii) which get exhausted |
| 3 Non-renewable resources | (iii) animals and plants |
| 4 Abiotic elements of the environment | (iv) a continuous supply of the resource remains available. |

- (a) 1 – (iv) 2 – (iii) 3 – (i) 4 – (ii)
 (b) 1 – (ii) 2 – (iii) 3 – (iv) 4 – (i)
 (c) 1 – (iv) 2 – (iii) 3 – (ii) 4 – (i)
 (d) 1 – (i) 2 – (iii) 3 – (ii) 4 – (iv)

35. From the set of facts given in column I and corresponding relevant fact given in column II, choose the correct pair of statement:

Column I

Column II

- | | |
|---|--|
| 1 Global warming | (i) when the exploitation of resources < the generation of resources |
| 2 Global environmental issues | (ii) gradual increase in the average temperature of the earth's lower atmosphere |
| 3 carrying capacity of the environment | (iii) ozone depletion |
| 4 Basic Problems Related to Environment | (iv) Problem of excessive exploitation of natural resources |

- (a) 1 – (iii) 2 – (ii) 3 – (i) 4 – (iv)
 (b) 1 – (iv) 2 – (iii) 3 – (i) 4 – (ii)
 (c) 1 – (i) 2 – (iv) 3 – (i) 4 – (iii)
 (d) 1 – (ii) 2 – (iii) 3 – (i) 4 – (iv)

36. From the set of facts given in column I and corresponding relevant fact given in column II, choose the correct pair of statement:

Column I

- 1 Pollution Control Boards
- 2 Overuse of resources
- 3 threat to India's environment (most pressing environmental concerns)
- 4 Misuse of resources

Column II

- (i) The excessive exploitation of natural resources to achieve a higher rate of growth
- (ii) diversion of resources to the wrong use
- (iii) Control over industrial and agricultural pollution
- (iv) Air pollution, water contamination, soil erosion, deforestation and wildlife extinction

- (a) 1 – (i) 2 – (iii) 3 – (iv) 4 – (ii)
 (c) 1 – (ii) 2 – (ii) 3 – (iv) 4 – (i)

- (b) 1 – (iii) 2 – (i) 3 – (iv) 4 – (ii)
 (d) 1 – (iv) 2 – (i) 3 – (ii) 4 – (iii)

37. From the set of facts given in column I and corresponding relevant fact given in column II, choose the correct pair of statement:

Column I

- 1 The priority issues for India's environment
- 2 Feature of Sustainable Development
- 3 Strategy for Sustainable Development
- 4 Sustainable development

Column II

- (i) land degradation, biodiversity loss, air pollution with special reference to vehicular pollution in urban cities, management of freshwater and solid waste management
- (ii) No reduction in the ability of future generations to meet their own needs
- (iii) is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
- (iv) Integrated Rural Development

- (a) 1 – (iv) 2 – (ii) 3 – (iii) 4 – (i)
 (c) 1 – (i) 2 – (ii) 3 – (iv) 4 – (iii)

- (b) 1 – (ii) 2 – (i) 3 – (iv) 4 – (iii)
 (d) 1 – (iii) 2 – (ii) 3 – (iv) 4 – (i)

38. From the set of facts given in column I and corresponding relevant fact given in column II, choose the correct pair of statement:

Column I

- 1 Affluent Consumption Standards
- 2 Industrialisation
- 3 Urbanisation
- 4 Global warming

Column II

- (i) leads to variation in seasonal temperature and rise in sea level by melting of polar ice.
- (ii) leads to deforestation and causes soil pollution along with reduction in rainfall.
- (iii) is essential for the development of a nation, to meet with the demands of people, but one downside is that it reduces the green cover of the earth i.e. it causes deforestation. For obtaining rapid results natural resources are used at a rapid pace which causes harm to the environment.
- (iv) put stress on the environment. The wastes generated are beyond the capacity of absorption and the resources are becoming extinct which is resulting in environmental crisis.

- (a) 1 – (iv) 2 – (iii) 3 – (ii) 4 – (i)
 (c) 1 – (ii) 2 – (iii) 3 – (iv) 4 – (i)

- (b) 1 – (iii) 2 – (iv) 3 – (ii) 4 – (ii)
 (d) 1 – (i) 2 – (iii) 3 – (ii) 4 – (iv)

39. This is an act of killing, capturing or hunting animals. It poses a grave risk of disturbing the balance in nature. Thus more steps need to be taken for conserving the wild animals and their habitat by setting up national parks.
 (a) Poaching (b) Caring (c) Staying (d) None of above
40. Which of the following are the factors contributing to land degradation in India:
 (a) The growing population has an ever increasing demand for space and thus deforestation occurs which causes soil erosion and reduces soil fertility.
 (b) The practice of shifting cultivation by small farmers and marginal farmers result in soil being eroded of nutrients.
 (c) Both (a) and (b)
 (d) None of above
41. In which of the following way/ways the opportunity costs of negative environmental impact are high:
 (a) Global environmental issues such as global warming and ozone depletion also contribute to increased financial commitments for the government.
 (b) Opportunity costs of negative environmental impacts are high.
 (c) Both (a) and (b) (d) None of above
42. The trapping of the sun's warmth in a planet's lower atmosphere, due to the greater transparency of the atmosphere to visible radiation from the sun than to infrared radiation emitted from the planet's surface is called:
 (a) Greenhouse effect (b) Economical effect (c) Environmental effect (d) None of above
43. In which of the following way/ways, Covid-19 helpful in rejuvenating the environment:
 (a) COVID-19 lockdown will serve as a ventilator not only for the river but also for the entire environment and wildlife. Due to the restriction of human mobility. The imposition of quarantine stopped all the commercial activity that greatly affects the various important environmental parameters which are directly connected to human health.
 (b) As all the types of social, economic, industrial and urbanization activity suddenly shut off, nature took the advantages and showed improvement in the quality of air, cleaner rivers, less noise pollution, undisturbed and calm wildlife.
 (c) Both (a) and (b)
 (d) None of above
44. Due to which of the following reason/reasons we need to spend huge amounts on technology and research to explore new resources:
 (a) Research and development (R&D) is the part of a company's operations that seeks knowledge to develop, design, and enhance its products, services, technologies, or processes.
 (b) Along with creating new products and adding features to old ones, investing in research and development connects various parts of a company's strategy and business plan.
 (c) Both (a) and (b)
 (d) None of above
45. When the resource extraction is above the rate of regeneration of the resources, and wastes generated are not within the assimilating capacity of the environment, which of the environmental functions fails to perform:
 (a) It sustains life by providing genetic and biodiversity
 (b) It sustains environment
 (c) It sustains life (d) None of above
46. The Kyoto Protocol extends the UNFCCC and makes members commit to a specific reduction target. The text of the protocol was unanimously adopted on 11 December 1997. It entered into force in February 2005. Currently, there are 192 parties to the protocol.
 India accepted Kyoto protocol in August:
 (a) 2003 (b) 2005 (c) 2002 (d) 2007
47. With help of this solar energy can be converted into electricity, what is it:
 (a) Photovoltaic cells (b) Atomic sun cells (c) Power cells (d) None of above

48. In recent years, India is taking efforts to increase the power generation through solar. India is also leading an international body. The name of this international body is:
 (a) international solar alliance (ISA) (b) National source of energy
 (c) Bureau of intelligence (d) None of above
49. This is an important source of electric power as it has economic advantages, yet a few scholars do not suggest generating more electricity through these sources as they object this, from the viewpoint of environment and sustainable development.
 (a) Atomic Energy (b) Water energy (c) Solar energy (d) Wind energy
50. Due to which of the following reason/ reasons, in early days when civilization just began environment problems did not arise.
 (a) Demand for environmental resources and services was much less than their supply
 (b) Pollution was within absorptive capacity of environment
 (c) The rate of resource extraction was less than the rate of regeneration of these resources.
 (d) All of above
51. Water contamination, air pollution, soil erosion and deforestation are the four:
 (a) Basic problems of India (b) pressing environmental concerns of India
 (c) Situations of environment (d) None of above
52. "Year 2020 was expected to be 'Super Year for Nature,' with a number of major international meetings and negotiations on environmental issues." Again things are streamlined and everything is at the same pace again, which of the following strategy/strategies can support the environment.
 (a) Use of Environment Friendly Fuel (b) Use of Renewable Resources
 (c) Recycling and reuse (d) All of above

INPUT TEXT BASED MCQs

Read the following passage and write answers of Q53–Q56

I define an Environmental Crisis as a dramatic, unexpected, and irreversible worsening of the environment leading to significant welfare losses. This definition includes and precludes several things. First, the change has to be dramatic and rapid in its pace. Therefore, the slow reduction in species numbers worldwide, or the gradual reduction in a fish stock does not constitute an environmental crisis under this definition. The environmental change has to be "unexpected" and by this I mean it is a low probability event. Dramatic changes and an element of unexpectedness distinguish crises from what I would refer to as resource tragedies. Resource tragedies are situations where resource overuse has been long-standing with the only remaining uncertainty being exactly when the train comes off the tracks. These situations are also worthy of study, but they are not true crises. An element of irreversibility is also important. If resources or nature are quick healing then it is difficult to see how any change in the environment should be of much concern, but if recovery would take a century or more things are quite different. Finally, the change in the environment must produce a significant welfare loss; therefore the scale of the damage cannot be small. If a crisis is ever to emerge I have to either limit the ability of agents to forecast the future, or reduce the government's ability to enforce first best outcomes. In what follows, I will assume governments are less than perfect while agents are trapped in a system where self-interested actions produce aggregate welfare losses.

53. What is the environmental crisis?
 (a) sum of the environmental problems that we face today
 (b) sum of the social problems that we face today
 (c) sum of the political problems that we face today (d) all of above
54. It refers to the practice of predicting what will happen in the future by taking into consideration events in the past and present.
 (a) estimation (b) solution (c) forecasting (d) none of the above
55. Does the quality of being irreversible (once done it cannot be changed) affect the environment.
 (a) yes (b) no (c) may be (d) none of the above

56. Which of the following is the social welfare effect on the environment?
 (a) market structure (b) consumer preferences
 (c) both (a) and (b) (d) none of the above

Read the following passage and write answers of Q57–Q60

Digital Revolution: Even though the digital revolution was surprisingly almost totally excluded from the original 2030 Agenda, the accelerating development and deployment of digital technologies around the world plays perhaps the most crucial role in catalyzing the societal transformations necessary for sustainable development. Just like other General-Purpose Technologies (GPTs) such as the steam engine during the First Industrial Revolution and electricity during the Second Industrial Revolution, digital technology both affords an opportunity and poses the risk for radical transformation of existing social and economic structures. Similarly to the first two industrial revolutions, the digital revolution, sometimes termed the Third Industrial Revolution, has yielded exponential growth in productivity by accelerating the spread of information through innovations such as the introduction of digital databases, the rise of the internet, and the introduction of mobile technology. As the development of digital systems proceeds, increased capacity for automation of physical and even cognitive processes is likely to spark a Fourth Industrial Revolution, whose capacity for reinventing production and information sharing processes is only matched by its potential to shake the underpinnings of modern economies and societies. The broad spectrum of revolutionary technology which constitutes the digital revolution poses great risks to social equity and sustainability if not anticipated and managed properly, but if properly mobilized, holds the promise of accelerating growth while expanding access to prosperity and relieving pressure on planetary boundaries.

57. Which of the following is/are sustainable development goals?
 (a) to promote the kind of development that minimises environmental problems.
 (b) to meet the needs of the existing generation without compromising with the quality of the environment for future generations.
 (c) judicious use of all resources and the technologies (d) all of the above
58. 'Plimsoll line' refer to in context of sustainable development:
 (a) absorptive capacity (b) carrying capacity of environment
 (c) both (a) and (b) (d) none of the above
59. Digital revolution leads to:
 (a) exponential growth in productivity by accelerating the spread of information through innovations such as the introduction of digital databases,
 (b) the rise of the internet, the introduction of mobile technology.
 (c) as the development of digital systems proceeds, increased capacity for automation of physical and even cognitive processes is likely to spark a Fourth Industrial Revolution
 (d) all of the above
60. Wind energy, Solar energy, Crop rotation, Sustainable construction, Efficient water fixtures, Green space, Sustainable forestry etc. are the examples of:
 (a) development (b) success
 (c) sustainable development (d) none of the above

Read the following passage and write answers of Q61–Q64

Global warming is a gradual increase in the average temperature of the earth's lower atmosphere as a result of the increase in greenhouse gases since the Industrial Revolution. Much of the recent observed and projected global warming is human-induced. It is caused by man-made increases in carbon dioxide and other greenhouse gases through the burning of fossil fuels and deforestation. Adding carbon dioxide, methane and such other gases (that have the potential to absorb heat) to the atmosphere with no other changes will make our planet's surface warmer. The atmospheric concentrations of carbon dioxide and CH₄ have increased by 31% and 149% respectively above pre-industrial levels since 1750. During the past century, the atmospheric temperature has risen by 1.1°F (0.6°C) and sea level has risen several inches. Some of the longer-term results of global warming and 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 an increased incidence of tropical diseases.

Among factors that may be contributing to global warming are the burning of coal and petroleum products (sources of carbon dioxide, methane, nitrous oxide, ozone); deforestation, which increase the amount of carbon dioxide in the atmosphere; methane gas released in animal waste; and increased cattle production, which contributes to deforestation, methane production, and use of fossil fuels. A UN Conference on climate change, held in Kyoto, Japan, in 1997, resulted in an international agreement to fight global warming which called for reductions in emissions of greenhouse gases by industrialised nations.

61. _____ development promotes the kind of development that minimizes environmental problems.
 (a) original (b) artificial (c) balanced (d) sustainable
62. It refers to the destruction of a layer due to the presence of chlorine and bromine from man-made CFC (Chlorofluorocarbon) and other gases.
 (a) globe (b) environment (c) global warming (d) ozone depletion
63. A decline in the quality of soil, water, or vegetation conditions
 (a) overgrazing (b) land degradation (c) negative environment (d) all of above
64. Which of the following is the feature of Sustainable Development?
 (a) Raises per capita income (b) Rational use of Natural Resources
 (c) No increase in Pollution (d) All of the above

Read the following passage and write answers of Q65–Q69

Ozone depletion refers to the phenomenon of reductions in the amount of ozone in the stratosphere. The problem of ozone depletion is caused by high levels of chlorine and bromine compounds in the stratosphere. The origins of these compounds are chlorofluorocarbons (CFC), used as cooling substance in air-conditioners and refrigerators, or as aerosol propellants, and bromofluorocarbons (halons), used in fire extinguishers. As a result of depletion of the ozone layer, more ultraviolet (UV) radiation comes to Earth and causes damage to living organisms. UV radiation seems responsible for skin cancer damage to living organisms. UV radiation seems responsible for skin cancer in humans; it also lowers production of phytoplankton and thus affects other aquatic organisms. It can also influence the growth of terrestrial plants. A reduction of approximately 5 per cent in the ozone layer was detected from 1979 to 1990. Since the ozone layer prevents most harmful wavelengths of ultraviolet light from passing through the Earth's atmosphere, observed and projected decreases in ozone have generated worldwide concern. This led to the adoption of the Montreal Protocol banning the used of chlorofluorocarbon (CFC) compounds, as well as other ozone depleting chemicals such as carbon tetrachloride, trichloroethane (also known as methyl chloroform), and bromine compounds known as halons.

65. CPCS is the full form of _____.
 (a) Central Pollution Control Board (b) Central Pollute Cover Board
 (c) Central Pollution Control Bureau (d) Centralisation Pollution Control Board
66. Which of the following steps are required to achieve sustainable development:
 (a) Limiting the human population.
 (b) Technological progress should be input efficient and not input consuming.
 (c) Renewable resources should be extracted on a sustainable basis, that is, the rate of extraction should not exceed the rate of regeneration.
 (d) All of above
67. Which of the following are serious adverse environmental consequences of development in India:
 (a) India has approximately 20 percent of the livestock population on a mere 2.5 percent of the world's geographical area. The high density of population and livestock and the competing uses of land for forestry, agriculture, pastures, human settlements and industries exert an enormous pressure on the country's finite land resources.
 (b) The per capita forestland in the country is only 0.08 hectare. There is an excess felling of about 15 million cubic meter forests over the permissible limit. Indiscriminate felling of trees has led to destruction of forest cover.
 (c) both (a) and (b) (d) none of above
68. Compare the relevance of following data related to pollution in India.
- | Number of motor vehicles | Year |
|--------------------------|------|
| 3 lakh | 1951 |
| 67 crores | 2003 |

“In India, air pollution is widespread in urban areas where vehicles are the major contributors and in a few other areas which have a high concentration of industries and thermal power plants.” In context of above given data, which of the following statement is true:

- (a) Vehicular emissions are of particular concern since these are ground level sources and, thus, have the maximum impact on the general population. The number of motor vehicles has increased from about 3 lakh in 1951 to 67 crores in 2003. In 2003, personal transport vehicles (two-wheeled vehicles and cars only) constituted about 80 per cent of the total number of registered vehicles thus contributing significantly to total air pollution load.
- (b) India is one of the ten most industrialised nations of the world. But this status has brought with it unwanted and unanticipated consequences such as unplanned urbanisation, pollution and the risk of accidents.
- (c) The CPCB (Central Pollution Control Board) has identified seventeen categories of industries (large and medium scale) as significantly polluting.
- (d) All of above

69. Analyse the data according to the information given in following table:

World's human population (in INDIA)	17 %
World's livestock population (in INDIA)	20%
Losses of Gases in India due to high density of population and livestock (every year)	0.8 million tonnes of nitrogen, 1.8 million tonnes of phosphorus and 26.3 million tonnes of potassium
Nutrients lost due to erosion (every year)	5.8 to 8.4 million tonnes

According to analysis of data, which of the following statement is true:

- (a) India supports approximately 17 percent of the world's human and 20 percent of livestock population on mere 2.5 percent of the world's geographical area.
- (b) The high density of population and livestock and country as a result of which the country loses 0.8 million tonnes of nitrogen, 1.8 million tonnes of phosphorus and 26.3 million tonnes of potassium every year.
- (c) According to the Government of India, the quantity of nutrients lost due to erosion each year ranges from 5.8 to 8.4 million tonnes.
- (d) All of the above

ANSWERS

Multiple Choice Questions

1. (a) 2. (b) 3. (c) 4. (a) 5. (d) 6. (c) 7. (a) 8. (b) 9. (a) 10. (b)
 11. (c) 12. (c) 13. (b) 14. (c) 15. (c) 16. (b) 17. (b) 18. (c) 19. (b) 20. (d)
 21. (c) 22. (d) 23. (c) 24. (d) 25. (c) 26. (d) 27. (b) 28. (d) 29. (d) 30. (d)
 31. (b) 32. (d) 33. (d) 34. (c) 35. (d) 36. (b) 37. (c) 38. (a) 39. (a) 40. (c)
 41. (a) 42. (a) 43. (a) 44. (c) 45. (a) 46. (c) 47. (a) 48. (a) 49. (a) 50. (d)
 51. (b) 52. (d)

Input Text Based MCQs

53. (a) 54. (c) 55. (a) 56. (b) 57. (d) 58. (b) 59. (d) 60. (c) 61. (d) 62. (d)
 63. (d) 64. (b) 65. (d) 66. (a) 67. (d) 68. (d) 69. (d)

