

Chapter 14

ANSWERS

Multiple Choice Questions

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|---------|---------|---------|---------|
| 1. (d) | 2. (c) | 3. (b) | 4. (d) |
| 5. (c) | 6. (b) | 7. (b) | 8. (a) |
| 9. (a) | 10. (d) | 11. (c) | 12. (d) |
| 13. (b) | 14. (b) | 15. (c) | 16. (d) |
| 17. (b) | 18. (d) | 19. (b) | 20. (a) |
| 21. (a) | 22. (d) | 23. (d) | 24. (c) |
| 25. (b) | 26. (a) | 27. (a) | 28. (a) |
| 29. (b) | 30. (b) | | |

Short Answer Questions

- 31.** Water is capable of dissolving a large number of substances. As water flows over the rocks containing soluble minerals, some of them get dissolved in the water. Thus, rivers carry many nutrients from land to the sea.
- 32.** Loss of top soil can be prevented by
(i) increasing the vegetational cover
(ii) checking the falling of trees
(iii) by preventing excessive grazing by animals
- 33.** Addition of undesirable chemicals like pesticides, fertilizers, industrial waste and domestic wastes not only kill the organisms, they also cause diseases to the aquatic organisms. Besides, the requirement of oxygen by aquatic organisms is also increased. There is a reduction in the dissolved oxygen in water which adversely affects the aquatic organisms.
- 34. Hint—** Air near water bodies is cooled due to evaporation of water.
- 35. Hint—** Air above the land gets heated quickly during day and starts rising. This creates a region of low pressure as a result air over sea rushes into this area of low pressure. This movement of air from one region to the other creates winds. During night, as water cools down slowly, the air above water is warmer than the air on land. So air moves from land to sea creating winds.

36. **Hint—** Lichens and Mosses (a) and (b). Lichens and mosses release substances which break down the stones resulting in the formation of soil.
37. *Abiotic factors making soil—* sun, water, wind
Biotic factors— lichens, mosses and trees
38. **Hint—** Through photosynthesis and absorption from soil
39. **Hint—** Cycling of these gases maintains consistency.
40. **Hint—** Absence of atmosphere on the moon.
41. **Hint—** Due to wind created during the day time
42. Mathura refinery releases toxic gases (like oxides of sulphur) which causes acid rain and hence corrosion of the marbles of Taj Mahal.
43. **Hint—** It is a bio-indicator and sensitive to SO_2 pollution from automobiles. Delhi has maximum number of automobiles, hence has a highly polluted environment.
44. **Hint—** Marine water is not useful for human and plant life directly. Uneven distribution of limited fresh water resources need conservation to cater to the demands.
45. **Hint—**(i) Thermal pollution (ii) Addition of poisonous (mercury) compounds in water (iii) Due to blockage of gills with any pollutant.
46. Lichens release chemical substances to break the rocks into smaller particles and hence make soil.
47. Water helps in formation of soil in following ways
- (i) Water causes 'wear off' of rocks over a long period of time.
 - (ii) It also causes the rocks to rub against other rocks creating small particles which are taken away downstream and deposited as soil.
 - (iii) Water expands on freezing in crevices of rocks and cracks rocks into smaller pieces.
48. Fertile soils are rich in organisms that decomposes dead organic matter forming humus. Humus gives minerals, absorbs water and makes soil porous.
49. **Hint—** This is practiced to check soil erosion through water currents on the slopes.
50. In root nodules nitrogen fixing *Rhizobium* bacteria are present which increases the soil fertility.

Long Answer Questions

- 51.** The fossil fuels like coal and petroleum contain small amounts of nitrogen and sulphur. When fossil fuels are burnt, it produces oxides of nitrogen and sulphur. These gases cause inhalation problems and in presence of rain forms acid rain. Burning of fossil fuels also increase the amount of suspended particles in air that reduce the visibility.
- 52.** Water pollution can be caused by addition of
- (i) undesirable substances like fertilizers and pesticides or any poisonous substances.
 - (ii) sewage directly entering a water body.
 - (iii) hot water from the power plant that increases the temperature and reduces the dissolved oxygen in water thus killing the aquatic organisms.
 - (iv) industrial effluents or radioactive substances in water body.
- We can take following measures to check water pollution
- (i) The sewer lines should not be directly connected to the water body.
 - (ii) We should not throw our garbages or domestic waste in the water body.
 - (iii) Prevent dumping of toxic compounds in the water bodies.
 - (iv) Washing of clothes should be avoided near water bodies as it adds lot of detergents to it.
 - (v) Plant trees near the banks of the river to check soil erosion otherwise erosion leads to siltation of water body.
- 53.** Infra-red radiations in sunlight pass through the glass and heat the interior of the car. The radiation emitted by upholstery and other inner parts of the car cannot pass out of the glass, so the heat trapped inside raises the temperature of the interior. This is because glass is transparent to infra-red radiation from the sun having smaller wavelength than that emitted by the interior of the car which are of longer wavelength to which the glass is opaque.
- 54.** Dust remains present in air as suspended particles can cause allergy and other respiratory diseases. It also affects plant growth, by covering stomata on leaf surface. It acts as the carrier of toxic compounds like heavy metals.
- 55. Hint—** The rocks are heated by the sun; they contract during night but not at same rate —resulting in cracks in rocks and ultimately to smaller particles.
- 56. Hint—** Increasing concentration (more than normal) of CO_2 is harmful and considered as a pollutant. Higher concentrations of CO_2 is one of the causes of green house effect/global warming.