

Our environment WS 1 and 2

ANSWERS

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| 1. | Ozone layer |
| 2. | Non-biodegradable |
| 3. | Aquarium |
| 4. | First trophic level |
| 5. | Unidirectional |
| 6. | a) 1% |
| 7. | b) Biological magnification |
| 8. | (c) Composting |
| 9. | b) producers |
| 10. | a) Carnivores |
| 11. | (iv) A is false but R is true. |
| 12. | (i) Both A and R are true and R is the correct explanation of the assertion. |
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| 16. | <p>(I) (a) Biomagnification takes place as chemicals transfer from lower trophic levels to higher trophic</p> <p>(II) In the old eastern European nations around Gulf of Bothnia, Kattegat, And Skagerrak DDT was still in use</p> <p>(III) (b) It effects the ability to secrete calcium in the females, which made the egg thin-shelled.</p> <p>(IV) Caused skeletal deformities and disturbances of metabolism, growth, and development of sexual organs.</p> <p>(V) d) In the 1960s</p> |
| 17. | Biodegradable substances are the substances that are broken down by biological processes. |
| 18. | The environment is the interaction between the physical, chemical and biological conditions of the region. |
| 19. | Grass -----🔗 Deer-----🔗 Tiger |

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| 20. | Ozone shields the surface of the earth from the ultraviolet rays of the Sun. |
| 21. | Bacteria and fungi. |
| 22. | Producers are the green plants that can manufacture food using CO ₂ and H ₂ O in the presence of sunlight, i.e., they are autotrophs. They serve as a source of food for all non-producers or consumers directly or indirectly. Hence, producers occupy the first trophic level in a food chain. |
| 23. | <p>Cause of Concern: Ozone layer present in the stratosphere has thinned out by about 8% over the equator and more so over the Antarctica where a big ozone hole appears every year. This has increased the level of UV-B radiations reaching the earth by 15-20%. These radiations are causing increased number of skin cancers, cataracts and reduced immunity in human beings. There is increased incidence of blinding of animals, death of young ones, reduced photosynthesis, higher number of mutations and damage to articles. Steps to Limit Damage -</p> <ol style="list-style-type: none"> 1. Ban on production and use of halons. 2. Ban on production and use of chlorofluorocarbons. |
| 24. | Pesticides are the chemicals used to kill plant and animal pests. They are non-biodegradable and toxicants. For example, excessive use of DDT resulted in reduced population of fish eating birds. DDT accumulated in such birds through the food chain. It interfered with the egg shell formation. The shell being thin broke due to weight of the bird during incubation. Hence, their population declined. |
| 25. | <p>(a) Decomposers: Most of the bacteria and fungi are saprophytes. They obtain their nourishment from organic remains. For this they secrete digestive enzymes over the remains. The remains are converted into soluble absorbable form. This results in decomposition of organic matter. Therefore, bacteria and fungi are called decomposers. (b) Advantages:</p> <ol style="list-style-type: none"> 1. Scavengers: Decomposers function as scavengers by removing organic remains and cleansing the earth. 2. Mineralisation: Decomposers release inorganic nutrients trapped in organic remains. The same are recycled. |

26. “Energy flow in a food chain is unidirectional.” In the ecosystem energy flows from one trophic level to the next trophic level of the food chain. Energy flows from producers i.e., green plants to the consumers. It does not flow from the last consumer to its previous consumer and so on. Thus, the energy does not flow back from consumers to the producers. So, we say that flow of energy in an ecosystem is unidirectional.

Entry of pesticides in a food chain: Some harmful chemicals like pesticides, when absorbed by the plants through soil and water, get transferred from first trophic to the last trophic level of the food chain. As these chemicals are non-degradable, their concentration in the bodies of living organisms at each trophic level progressively increases. Their increase in the concentration of harmful chemicals in the body of living organisms at each trophic level of a food chain is called biological magnification. The level of concentration of chemicals is maximum for human beings as they are at the highest trophic level.

27. (a) Decomposers break down complex organic substances (dead remains and waste products of organisms) into simpler inorganic substances that can be absorbed by the plants. They are essential for the proper functioning of an ecosystem. • Decomposers play an important role in the cycling of materials in the biosphere.

- By decomposing dead bodies of plants and animals they help in cleaning the environment.
- They replenish the soil naturally.

(b) In the ecosystem energy flows from one trophic level to the next trophic level of the food chain. Energy flows from producers, i.e., green plants to the consumers. It does not flow from the last consumers to its previous consumers and so on. The energy captured by the autotrophs does not go back to the solar input. Thus, the energy does not flow back from consumers to the producers. Hence the flow of energy in a food chain is unidirectional.

28. (a) The scientists were exposed to harmful UV-radiations of the sunlight as there was a big hole over Antarctica and this might be the cause of skin cancer. The ozone layer acts as an ozone shield and absorbs the harmful UV-radiations. The UV-radiations have extremely harmful effects on human beings, animals as well as plants.

(b) We learn that the ozone layer is very important for the existence and survival of life on earth. Ozone layer absorbs high energy UV-radiations causing a rise in temperature of the stratosphere. The use of chemicals like CFCs has endangered the ozone layer. CFCs used as refrigerator coolants rise to the stratosphere where these molecules are broken down by UV-rays resulting in attack on the ozone molecules damaging the ozone umbrella of earth. Due to ozone layer depletion UV-rays reaching the earth cause skin cancer, cataracts, damage immune system, etc. UV-rays also decreases crop yield and certain fish larvae which are important constituents of aquatic food chains. It may also disturb global rainfall causing ecological disturbance. In this way all on the earth would be destroyed gradually.

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| 29. | <p>(a) Raju. He is sparing the municipal committee of picking up biodegradable waste and transporting the same to disposable sites.</p> <p>(b) Raju is producing her own compost for her home garden. He is not only saving money on purchase of manure and fertilizer but is also practicing organic farming.</p> <p>(c) Lokesh's practice of keeping two separate bins of bio-degradable and non-biodegradable garbage is most suitable but Raju's practice is better as it reduces the bulk of garbage and saves on money.</p> |
| 30. | Biodegradable and non-biodegradable wastes should be discarded in two separate bins because of their effective treatment and disposal . The separation of these wastes must be done at the source only. This will help in preventing environmental pollution. |
| 31. | It is a structural & functional unit of the biosphere consisting of living beings & the physical environment, which interact with each other & maintain a balance in nature. |
| 32. | Refer Answer no. 25 |
| 33. | Making Kulhad made of clay on a large scale resulted in the loss of fertile top soil. Now, disposable paper cups are used because the paper can be recycled, it is biodegradable and is eco-friendly material which does not cause harm to the environment . |
| 34 | Biomagnification makes humans more prone to cancer, kidney problems, liver failure, birth defects, respiratory disorders, and heart diseases . |
| | Ordinary washing of edibles (fruits and vegetables) does not reduce the effect of biological magnification because there is concentration of harmful chemicals (say pesticides) in them when we sprayed this harmful chemical over the plants to protect them from pests and insects . |