Our Environment Important Questions with Answers Class 10 Science Chapter 13

Our Environment Class 10 Science MCQs (1 Mark)

1. Excessive exposure to ultraviolet radiation causes
(a) Inflammation of liver
(b) Cancer of skin
(c) Damage to the lungs
(d) Jaundice
Answer – b

2. Which group of organisms are not constituents of a food chain?
(a) Grass, lion, rabbit
(b) Plankton, man, fish, grasshopper
(c) Wolf, grass, snake, tiger
(d) Frog, snake, eagle, grass, grasshopper
Answer – c

3. First link in any food chain is usually green plants because
(a) They are widely distributed
(b) They are fixed at one place in the soil
(c) They alone have the capacity to synthesise food using sunlight
(d) There are more herbivores than carnivores
Answer – c

4. Which of the following is a logical sequence of food chain
(a) Producer → consumer → decomposer
(b) Producer → decomposer → consumer
(c) Consumer → producer → decomposer
(d) Decomposer → producer → consumer
Answer – a

5. Acid rain is caused by the oxides of
(a) Carbon
(b) Nitrogen only
(c) Sulphur only
(d) Sulphur and nitrogen
Answer – d

6. Which of the following is an abiotic component of an ecosystem?
(a) Humus
(b) Bacteria

(c) Plants
(d) Fungi
Answer – a

7. In a food chain, the third trophic level is always occupied by
(a) Herbivore
(b) Carnivore
(c) Decomposer
(d) Producer
Answer – b

8. In the given food chain if the amount of energy at the fourth trophic level is 4 kJ, what will be the energy available at the producer level? Grass → Grasshopper → Frog → Snake
(a) 4 kJ
(b) 40 kJ
(c) 400 kJ
(d) 4000 kJ
Answer – d

9. Which of the two in the following sets belong to the same trophic level?
(a) Grass; Grasshopper
(b) Goat; Spider
(c) Hawk; Rat
(d) Frog; Lizard
Answer – d

10. Which of the following chemicals causes depletion of the ozone layer?
(a) Carbon tetrachloride
(b) Methane
(c) Chloro fluoro carbon
(d) Carbon monoxide
Answer – c

Our Environment Class 10 Science 1 Mark Questions

Q1. What are two main components of our environment?
Answer – (a) Biotic Components, e.g., producers, herbivores, carnivores, decomposers. (b) Abiotic Components e.g., climatic factors, edaphic factors, topographic factors, inorganic nutrients and organic substances.

Q2. Which compounds are responsible for the depletion of ozone layer ?
Answer – Ozone depleting substances like chlorofluorocarbons, halons, methane, N2O, Chlorine, Carbon tetrachloride.

Q3. Why are green plants called producers ?
Answer – Green plants are also called producers because only they can synthesise organic food from inorganic raw materials with the help of solar energy in the process of photosynthesis. This food is not only used by green plants but also all other organisms called consumers.

Q4. Give an example of food chain of four trophic levels that exists in a grassland.

Q5. Why there has been a large hue and cry against the use of CFCs ?
Answer – CFCs (Chlorofluorocarbons) pass on to the upper layers of atmosphere, i.e., stratosphere, where ozone layer is based. CFCs cause depletion of ozone layer that allows harmful UV radiations to reach the surface of the earth causing skin cancers and defective eye sight.

Our Environment Class 10 Science 2 Marks Questions

Q1. Name the type of compounds which are used as refrigerants and in fire extinguishers that deplete the ozone layer in the atmosphere.
Answer – Chlorofluorocarbons (as refrigerants) and halons (in fire extinguishers).

Q2. Which gas shields the surface of earth from harmful radiations of the sun? Why are UV radiations harmful to organisms?
Answer – Ozone.
Harmful Effects of UV Radiation.
Skin cancer, cataract and fall of immunity in humans.
More mutations, fall in photosynthesis, blinding of animals, killing of their young ones.

Q3. Draw a line diagram to show flow of solar energy in ecosystem.
Answer –

Q4. In the following food chain, plants provide 500J of energy to rats. How much of energy will be available to hawks from snakes?
Plants ———> Rats ———> Snakes ———> Hawks
Answer – Energy available to snakes from rats
500 J % 10 = 50 J
Energy available to hawks = 50 J% 10 = 5J.

Q5. Explain "biological magnification" with the help of an Example.
Answer – Biological magnification is an increase in the concentration of a chemical per unit weight of the organisms with the successive rise in trophic level. In one study it was found that the concentration of harmful chemicals like DDT will increase 80,000 times the concentration present in water.

Our Environment Class 10 Science 5 Marks Questions

Q6. Distinguish between biodegradable and non-biodegradable substances. List two effects of each of them in our environment.

Answer – (a) Differences between Biodegradable and Non-biodegradable Substances:
(b) Effects of Biodegradable Substances:
1. Stink: Within a day or so waste biodegradable substances begin to stink and produce foul gases.
2. Pests and Pathogens: The decaying biodegradable substances become breeding places of flies and many other pests.
3. They also contain a number of pathogens. Flies and other pests carry the germs to all the places visited by them resulting in spread of diseases.
(c) Effects of Non-biodegradable Substances:
1. Dumping Area: Dumping of non-biodegradable substances on a piece of land converts the same into barren land. It is also called landscape pollution.
2. Biological Magnification: Pesticides, heavy metals and other chemicals enter water and food chains. They accumulate in toxic proportions and harm all kinds of living organisms.
Their concentration also increases with rise in trophic level. Human beings are harmed the most because man lies at the top of every food chain.

Biodegradable Wastes	Non-biodegradable Wastes
1. Origin. They are biological in origin.	They are commonly man-made.
2. Degradability. The wastes are degraded by microorganisms.	They are not degraded by microorganisms.
3. Accumulation. They do not accumulate in nature.	They pile up and accumulate in nature.
4. Biomagnification. The biodegradable wastes do not show biomagnification.	The soluble non-degradable wastes enter food chains and undergo biomagnification.
5. Resource. The wastes can be converted into resource.	Some wastes can be recycled.
Examples. Garbage, livestock wastes, sewage.	Examples. Plastic, polythene, glass, nickel, cadmium, several pesticides.

Q7. Why are bacteria and fungi called decomposers?
List any two advantages of decomposers to the environment.

Answer – (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:
Scavengers: Decomposers function as scavengers by removing organic remains and cleansing the earth.
Mineralisation: Decomposers release inorganic nutrients trapped in organic remains. The same are recycled.

Q8. (a) What is ozone? How is it formed in the atmosphere? Explain with equation.
(b) How is the ozone layer useful?
(c) Name the substances responsible for the depletion of the ozone layer.

Answer – (a) Ozone is a triatomic form of oxygen, O3. Ozone is formed in the upper atmosphere by the action of ultraviolet (UV) radiations over oxygen (O2)

(b) the important ozone-depleting substances or ODS are chlorofluorocarbons (CFC), methane, N_2O, chlorine, halons and carbon tetrachloride.

Q9. (a) What are trophic levels in a food chain?
(b) Explain the flow of energy through the food chain.
(c) Write a four trophic level food chain and represented in the form of an ecological pyramid.

Answer – (a) Trophic Levels. They are steps or divisions of the food chain which are characterised by particular methods of obtaining food, e.g., producers (T1), herbivores (T2), primary carnivores (T3), etc.

(b) Flow of Energy Through the Food Chain. Energy enters a food chain through producers. Producers or green plants trap solar energy and convert it into chemical energy of food during photosynthesis. From producers energy passes into herbivores.

A lot of energy dissipates during transfer and utilization of food energy by herbivores (10% law). From herbivores the food energy passes into primary carnivores, again with a lot of dissipation. Only about 10% of herbivore energy is passed into body mass of primary carnivores. From primary carnivores, nearly 10% energy passes into secondary carnivores and so on. It is ultimately lost as heat.

(c) Aquatic Four Trophic Level Food Chain. Phytoplankton ———> Zooplankton ———> Small Carnivorous Fish ———> barge Carnivorous Fish.