Class 10th Science

Chapter - 15

Our Environment

Textual Questions and Answers :

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Q.1. Why are some substances biodegradable and some non- biodegradable?

Ans :- Many human made materials like plastics will not be broken down by the action of bacteria or other saprophytes. These materials will be acted upon by physical process like heat and pressure, but under the ambient conditions found in our environment, these persist for a long time. Substances that are broken down by biological 1. processes are said to be biodegradable substances that are not broken down in this manner are said to be non-biodegradable.

Q.2. Give any two ways in which biodegradable substances would affect the environment.

Ans :- (i) The biodegradable substances become pollutants when that are present in large quantities and are not degraded at right time due to any reason.

(ii) Biodegradable substances carries many diseases such as cholera.

Q.3. Give any two ways in which non-biodegradable substances would affect the environment.

Ans :- (i) Non-biodegradable substances can not degrade and return the minerals to the environment. They pile up and cause harm to the various members of the ecosystem.

(ii) They may cause biomagnification in the food chain and end up in humans.

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Q.1. What are trophic levels? Give an example of a good chain and state the different trophic levels in it.

Ans :- Trophic level is the fundamental level occupied by an organism in food chain. Trophic literally means feeding, so trophic levels are the levels or positions at which species feed. Examples of trophic Levels include 'herbivores' and 'decomposers'

An example of a food chain depicting various trophic levels is as follows :-

3rd level carnivore	Eagle
↑	↑
2nd level carnivore	Snake
↑	↑
1st level carnivore	Frog
↑	↑

Herbivore	Grasshopper
↑	↑
Producers	Grass

Q.2. What is the role of decomposers in an ecosystem?

Ans :- Decomposers are microorganisms comprising of bacteria and fungi that breakdown the dead remains and waste products of organisms. They break down the complex organic substances into simple inorganic substances that go into the soil and are used up once mor by the plants.

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Q.1. What is ozone and how does it affect any ecosystem?

Ans :- Ozone is a molecule formed by three atoms of oxygen. Ozone is a deadly poison. However, at the higher levels of the atmosphere, ozone performs an essential function. It shields the sunface of the earth from ultraviolet radiation from the sun. This radiation is highly damaging to organisms, for example, it is known to cause skin cancer in human beings.

Q.2. How can you help in reducing the problem of waste disposal? Give any two methods.

Ans :- (i) Minimizing the use of non-biodegradable wastes.

(ii) Production of compost, bio gas from biodegradable wastes.

EXERCISES

Q.1. Which of the following groups contain only biodegradable items?

(a) Grass, flowers and leather.

(b) Grass, wood and plastic.

(c) Fruit-peels, cake and lime-juice.

(d) Cake, wood and grass.

Ans :- (c) fruit-peels, cake and lime-juice.

Q.2. Which of the following constitute a food-chain?

(a) Grass, wheat and mango .

(b) Grass, goat and human.

(c) Goat, cow and elephant.

(d) Grass, fish and goat.

Ans :- (b) Grass, goat and human.

Q.3. Which of the following are environment-friendly practices?

(a) Carrying cloth-bags to put purchases in while shopping.

(b) Switching off unnecessary lights and fans.

(c) Walking to school instead of getting your mother to drop you on her scooter.

(d) All of the above.

Ans :- (d) All of the above.

Q.4. What will happen if we kill all the organisms in one trophic level?

Ans :- If we kill all the organisms in one trophic level then transfer of food to the next trophic level will stop due to which the organisms of next trophic level will starve and die or migrate to other areas. The killing of all the organisms in one trophic level will also lead to the overpopulation of organisms in the previous trophic level. These effects will cause an imbalance in the ecosystem.

Q.5. Will the impact of removing all the organisms in a trophic level be different for different trophic levels? Can the Jun organisms of any trophic level be removed without causing any damage to the ecosystem?

Ans :- Yes, the impact of removing all the organisms in a trophic level will be different for different trophic levels. For example in the food chain : Grass → Deer → Lion :

If we remove all the Lion at the third trophic level, then the number of deer will increase too much. All these deer will eat up all the grass and other plants turning the forest into a desert.

If we remove all the deer at the second trophic level, then lions will not get sufficient food, they will starve and die. Deer eat grass and other green plants, so the amount of grass and other green plants will increase too much.

All the organisms of my trophic level cannot be removed without causing any damage to the ecosystem.

Q.6. What is biological magnification? Will the level of this magnification be different at different levels of the y ecosystem?

Ans :- Biological Magnification is a phenomenon which explains the increasing concentration of harmful chemicals like DDT with each increase in trophic level. From the soil the chemicals are absorbed by the plants. The primary consumers eat these plants and the harmful chemicals come to reside in their bodies. As these chemicals are not degradable, they accumulate in the bodies of the organisms and the top level of the food chain gets the highest concentration of these harmful chemicals.

Most of the plants products which we eat are grown in fields in which pesticides and fertilisers have been used. These are absorbed by the plants and cannot be

removed by washing or other means. As humans are at the top level of the food chain these chemicals get accumulated in our bodies and cause various disorders.

The level of biological magnification is different for different trophic levels of an eco system.

Q.7. What are the problems caused by the non-biodegradable wastes that we generate?

Ans :- The non-biodegradable wastes cannot be made less toxic easily, so they cause a lot of problems for us as well as environment. For example some of the non-biodegradable wastes enter the food chain of humans. These non-biodegradable wastes get concentrated in human beings and damage their health in the long run.

The excessive use of non-biodegradable fertilisers in agriculture makes the soil either too much acidic or too much alkaline. When the soil becomes too acidic or too alkaline the crop yields is reduced.

Q.8. If all the waste we generate is biodegradable, will this have no impact on the environment?

Ans :- Even if all the waste we generate is biodegradable, it will have an impact on the environment. This is because too much biodegradable waste can not be broken down into harmless simpler substances by the decomposes like micro-organisms at the right time.

Q.9. Why is damage to the ozone layer a cause for concern? What steps are being taken to limit this damage?

Ans :- Ozone layer is very important for the existence of life an earth because it absorbs most of the harmful ultraviolet radiations coming from the sun and prevents them from reaching the earth. The ultraviolet radiations have extremely harmful effects on human beings, Other animals as well as plants. Ultraviolet rays can cause skin cancer. Ultraviolet rays damage immune system by lowering the body's resistance to diseases. Thus, it is the ozone layer in the upper atmosphere which protects us from these diseases by absorbing ultraviolet rays coming from the sun.

Main pollutants responsible for the threat to ozone layer are CFCS which are found in air conditioners and refrigeration, as clearing solvents, aerosol propellants, ion foam insulation and in certain fire extinguishers. In 1987, the United Nations Environment Program succeeded in forgoing and agreement to freeze CFC production at 1986 level.

Additional Questions

Very short answers type questions :

Q.1. What is the functional unit of the environment comprising of the living and nonliving components called?

Ans :- Ecosystem.

Q.2. Name two biodegradable waste.

Ans :- (i) Cattle dung.

(ii) Compost.

Q.3. Name two non-biodegradable waste.

Ans :- (i) D.D.T.

(ii) Plastics.

Q.4. Write four examples of ecosystem.

Ans :- (i) A grassland.

(ii) A forest.

(iii) A desert.

(iv) A river.

Q.5. Write two examples of artificial ecosystem.

Ans :- (i) Crop-fields.

(ii) Aquarium.

Q.6. Name two natural ecosystem.

Ans :- (i) A forest.

(ii) A river.

Q.7. Which one of the following is not a terrestrial ecosystem?

(a) Forest.

(b) Grassland.

(c) Aquarium.

(d) Desert.

Ans :- (c) Aquarium.

Q.8. State whether the following statements are true or false :

(a) In biology, human beings are called producers.

(b) Secondary consumers and tertiary consumers, both are carnivores.

Ans :- (a) False.

(b) True.

Q.9. Which of the following belong to the same trophic level?

(a) Goat.

(b) Spider.

(c) Plants.

(d) Hawk.

(e) Rat.

Ans :- (a) Goat and (e) Rat.

Q.10. Which of the following belong to the same trophic level?

(a) Tree.

(b) Frog.

(c) Snake.

(d) Grass.

(e) Lizard.

Ans :- (a) Tree and (d) Grass.

Q.11. Name the organisms belonging to the second and the fourth trophic levels in the food chain comprising the following :

(a) Frogs.

(b) Plants.

(c) Snakes.

(d) Hawks.

(e) Insects.

Ans :- Second trophic level :- Insects

Fourth trophic level : -Snakes.

Q.12. In a food chain consisting of grass, frog, bird and insects, where will the concentration of the harmful chemicals be maximum?

Ans :- Bird.

Q.13. If a harmful chemical enters a food chain comprising cat, mice and plants, which one of these organisms is likely to have the maximum concentration of the harmful chemical in its body?

Ans :- Cat.

Q.14. Name two waste materials which can be recycled.

Ans :- Paper and plastics.

Q.15. If 5 joules of energy is available at producer level (plants) then how much energy will be transferred to the lion in the following food chain? Plants → Goat → Lion

Ans :- 0.05J

Q.16. Where does all the energy in living organisms originate from?

Ans :- Sun.

Q.17. Name two predators of snakes in a food web operating in a forest ecosystem?

Ans :- Peacock and Hawk.

Q.18. Which one term in the following includes the others? air, flora, fauna, environment, water, sunlight, soil.

Ans :- Environment.

Q.19. A food chain represents a unidirectional flow of X. What is X?

Ans :- Energy.

Q.20. Name the pigment which is essential for trapping of solar energy.

Ans :- Chlorophyll.

Multiple Choice Questions:

Q.1. Which of the following constitutes a food chain?

(a) Grass, wheat and mango.

(b) Grass, goats and human.

(c) Goat, cow and elephant.

(d) Grass, fish and goat.

Ans :- (b) Grass, goats and human.

Q.2. In a food chain the initial organism is usually

(a) Photosynthetic.

(b) Herbivore.

(c) Saprophytic.

(d) Parasitic.

Ans :- (a) Photosynthetic.

Q.3. Which of the following represents a possible food chain found in a pond.

	primary	primary	secondary
	producers	consumers	consumers
(a)	Green algae	fish	mosquito larvae .
(b)	Fish	Green algae	mosquito larvae

(c) Mosquito larvae fish green algae

(d) Green algae mosquito larvae fish

Ans :- (d) Green algae mosquito larvae fish

Q.4. Which of the following are decomposers of dead organisms?

	Bacteria	Fungi	Viruses
(a)	No	yes	yes
(b)	Yes	no	yes
(c)	Yes	yes	no
(d)	Yes	yes	yes

Ans :- (c) Yes yes no

Q.5. Which of the following is an artificial ecosystem?

(a) Pond.

(b) Crop field.

(c) Lake.

(d) Forest.

Ans :- (b) Crop field.

Q.6. Disposable plastic plates should not be used because

(a) They are made of light weight materials.

(b) They are made of toxic materials.

(c) They are made of biodegradable materials.

(d) They are made of non-biodegradable materials.

Ans :- (d) They are made of non-biodegradable materials.

Q.7. In a food chain, the third trophic level is always occupied by :

(a) Carnivores.

(b) Herbivores.

(c) Decomposers

(d) Producers.

Ans :- (a) Carnivores.

Q.8. Accumulation of non-biodegradable pesticides in the food chain in increasing amount at each higher trophic level is known as :

(a) Eutrophication.

(b) Biomagnification.

(c) Pollution.

(d) Accumulation.

Ans :- (c) Pollution.

Q.9. If a grasshopper is eaten by a frog, then the energy transfer will be from.

(a) Producer to decomposer.

(b) Producer to primary consumer.

(c) Primary consumer to secondary consumer

(d) Secondary consumer to tarliery consumer.

Ans :- (c) Primary consumer to secondary consumer

Q.10. An ecosystem includes :

(a) All living organisms.

(b) Non-living objects.

(c) Both living organisms and non-living objects.

(d) All living organisms and input of sun's energy.

Ans :- (c) Both living organisms and non-living objects.

Q.11. The decomposers in an ecosystem :

(a) Convert inorganic material to simpler forms.

(b) Convert organic material to inorganic forms.

(c) Convert inorganic material into organic component.

(d) Do not break down organic compound.

Ans :- (b) Convert organic material to inorganic forms.

Q.12. What will happen deer is missing in the food chain given below.

Grass → Deer → Tiger

(a) The population of tigers increases.

(b) The population of grass decreased.

(c) Tigers will start eating grass.

(d) The population of tigers decreases and the population of grass increases.

Ans :- (d) The population of tigers decreases and the population of grass increases.

Q.13. Organisms which synthesise carbohydrates from inorganic compounds by using radiant energy are called.

(a) Decomposers.

(b) Producers.

(c) Herbivores.

(d) Carnivores.

Ans :- (b) Producers.

Q.14. Organism of a higher trophic level which feed on several types of organisms belonging to a number of lower trophic levels constitute the :

(a) Ecosystem.

(b) Food web.

(c) Ecological pyramid.

(d) Food chain.

Ans :- (b) Food web.

Q.15. In the following groups of materials, which group/groups contain only non-biodegradable materials?

(i) Wood, paper, leather.

(ii) Polythene, detergent pvc.

(iii) Plastic, detergent, grass.

(iv) Plastic, bakelite, DDT.

(a) (iii)

(b) (iv)

(c) (i) and (iii)

(d) (ii) and (iv)

Ans :- (d) (ii) and (iv)

Q.16. Which of the following statement is incorrect?

(a) All green plants blue green algae are producers comperens.

(b) Green Plants get their food from readymade organic comperens.

(c) Producers prepare their own food from inorganic compounds.

(d) Plants convert solar energy into chemical energy.

Ans :- (b) Green Plants get their food from readymade organic comperens.

Q.17. Which of the following group of organisms are not constituents of a food chain?

(i) Grass, lion, rabbit, wolf.

(ii) Plankton, man, fish, grasshopper.

(iii) Wolf, grass, snake, tiger

(iv) Frog, snake, eagle, grass, grasshopper.

(a) (i) and (iii)

(b) (iii) and (iv)

(c) (ii) and (iii)

(d) (i) and (iv)

Ans :- (c) (ii) and (iii)

Q.18. In the figure given alongside, the various trophic levels are shown in the form of a pyramid. At which trophic level the maximum energy is available?

(a) T_4

(b) T_2

(c) T_1

(d) T_3

Ans :- (c) T_1

Q.19. One of the following is not a biodegradable material. This one is :

(a) Cotton.

(b) Animal bones.

(c) Aluminium foil.

(d) Wood.

Ans. (c) Aluminium foil.

Q.20. Which of the following is not a non-biodegradable maternal?

(a) Nylon socks.

(b) Plastic school bag.

(c) Jute carry bag.

(d) Polyester clothes.

Ans :- (c) Jute carry bag.

Q.21. The use of one of the following will pollute the environment. This one is :

(a) Paper carry bags.

(b) Cotton cloth carry bags.

(c) Nylon cloth carry bags.

(d) Jute carry bags.

Ans :- (c) Nylon cloth carry bags.

Q.22. One of the following is not a consumer. This one is :

(a) Giraffe.

(b) Antelope.

(c) Algae.

(d) Alligator.

Ans :- (c) Algae.

Q.23. Which of the following is not a producer?

(a) Grass.

(b) Zooplankton.

(c) Phytoplankton.

(d) Paddy.

Ans :- (b) Zooplankton.

Q.24. One of the following is a micro-consumer. This one is-

(a) Ant.

(b) Lice.

(c) Fungi.

(d) Mosquito.

Ans :- (c) Fungi.

Q.25. Which of the following act as decomposers in an ecosystem?

(a) Lactobacillus bacteria.

(b) Cyanobacteria.

(c) Putrefying bacteria.

(d) Rhizobium bacteria.

Ans :- (c) Putrefying bacteria.

Q.26. One of the following helps in the recycling of materials in an ecosystem. This one is :

(a) Autotrophs.

(b) Saprotrophs.

(c) Omnivores.

(d) Carnivores.

Ans :- (b) Saprotrophs.

Q.27. In the food chain comprising of a snake, grass, insect and frog, the secondary consumer is :

(a) Insect.

(b) Snake.

(c) Frog.

(d) Grass.

Ans :- (c) Frog.

Q.28. Sahara desert was formed over a period of time due to one of the following uncontrolled activities of man:

(a) Excessive cutting down of forest plants and trees.

(b) Excessive killing of large herbivores.

(c) Excessive killing of large carnivores.

(d) Excessive use of poisonous chemicals called herbicides.

Ans :- (c) Excessive killing of large carnivores.

Q.29. What provides the energy which then flows through a food chain?

(a) Glucose.

(b) Oxygen.

(c) Respiration.

(d) Sunlight.

Ans :- (d) Sunlight.

Q.30. Which pollutant released into the air during refrigeration and airconditioning is the greatest contributor to the depletion of ozone layer?

(a) BHC.

(b) DDT.

(c) CFC.

(d) UNEP.

Ans :- (c) CFC.

Q.31. In the food chain given below, if the amount of energy available at fourth trophic level is 5kj, what was the energy available at the producer level?

Grass → Grasshopper → Frog Snake →Hawk

(a) 500 kj

(b) 50 kj

(c) 5000 kj

(d) 5 kj

Ans :- (c) 5000 kj.

Q.32. Which of the following limits the number of trophic levels in a food chain?

(a) Insufficient food supply from producer level.

(b) Decrease in energy at higher trophic levels.

(c) Increase in the number of organisms at higher trophic levels.

(d) Accumulation of harmful chemicals at higher trophic levels.

Ans :- (b) Decrease in energy at higher trophic levels.

Q.33. What percentage of sun's energy falling on the levels of green plants is utilised by the plants in the process of photosynthesis and stored as chemical energy of food?

(a) 99 percent.

(b) 10 percent.

(c) 1 percent.

(d) 20 percent.

Ans :- (c) 1 percent.

Q.34. The depletion of ozone layer in the upper atmosphere is mainly due to the emission of :

(a) Unburnt hydrocarbons.

(b) Chlorofluorocarbons.

(c) Greenhouse gases.

(d) Ultraviolet radiations.

Ans :- (b) Chlorofluorocarbons.

Q.35. In an ecosystem, the ten percent energy available for transfer from one trophic level to the next is in the form of :

(a) Heat energy.

(b) Light energy.

(c) Chemical energy.

(d) Mechanical energy.

Ans :- (c) Chemical energy.

Q.36. The flow of energy in an ecosystem is always :

(a) Unidirectional.

(b) Bidirectional.

(c) Cyclic.

(d) Multidirectional.

Ans :- (a) Unidirectional.

Q.37. The excessive exposure of human to ultraviolet rays results in :

(i) Damage to immune system.

(ii) Damage to lungs.

(iii) Skin cancer.

(iv) Peptic ulcers.

(a) (i) and (ii)

(b) (ii) and (iv)

(c) (i) and (iii)

(d) (iii) and (iv)

Ans :- (c) (i) and (iii)

Q.38. Which of the following gets the minimum energy through the food chain in an ecosystem?

(a) Carnivore.

(b) Large carnivore.

(c) Producer.

(d) Herbivore.

Ans :- (b) Large carnivore.

Q.39. A food chain comprises of cat, seed-eating bird, plants, and dog. The organism which will have the maximum concentration of harmful pesticides coming through the food chain is most-likely to be :

(a) Cat.

(b) Plants.

(c) Dog.

(d) Seed eating bird.

Ans :- (c) Dog.

Q.40. An aquatic food chain comprises of the organisms like tadpoles, weeds, fish and water beetles. The organism gets the minimum energy through this food chain is :

(a) Water beetles.

(b) Tadpoles.

(c) Weeds

(d) Fish.

Ans :- (d) Fish.

Q.41. Most of the water surface of a lake is covered with algae, This algae in a part of the food chain which also includes small fish, bird, larvae and big fish. Which of the following will obtain the maximum energy?

(a) Big fish.

(b) Bird.

(c) Larvae.

(d) Small fish.

Ans :- (c) Larvae.

Q.42. If the energy available at the producer level in a food chain is 150 J, how much energy will be transferred to tertiary consumer?

(a) 15 J

(b) 10 J

(c) 1.50 J

(d) 0.15 J

Ans :- (d) 0.15 J

Q.43. If the energy trans ferred to a tertiary consumer in a food chain is 10 J, how much energy was available to the primary consumer?

(a) 100J

(b) 500J

(c) 1000 J

(d) 5000 J

Ans :- (c) 1000 J

Q.44. In additions to wheat plants, a crop field ecosystem has organisms such as snake, peacock, eagle and mice. If the wheat plants are sprayed with

pesticides periodically, which of the following will have the minimum concentration of pesticides in the body?

(a) Snake.

(b) Eagle.

(c) Mice.

(d) Peacock.

Ans :- (c) Mice.

Q.45. Which of the following in the best method to dispose of biological wastes from hospitals?

(a) Landfill.

(b) Recycling.

(c) Incineration.

(d) Composting.

Ans :- (c) Incineration.

Q.46. In an ecosystem :

(i) The flow of energy is unidirectional

(ii) The flow of materials is unidirectional.

(iii) The flow of materials is cyclic.

(iv) The flow of energy is cyclic.

(a) (i) and (ii)

(b) (ii) and (iii)

(c) (i) and (iv)

(d) (i) and (iii)

Ans :- (d) (i) and (iii)

Q.47. The ten percent law is associated with

(a) Transfer of energy from various trophic levels to decomposers ina food chain.

(b) Transfer of ATP energy into muscular energy.

(c) Transfer of chemicl energy from one organism to another.

(d) Transfer of sun's energy to the organisms called producers.

Ans :- (c) Transfer of chemical energy from one organism to another.

Q.48. The harmful chemical which is accumulating in human beings through food chain is :

(a) Benzene hexachloride.

(b) DDT.

(c) Chlorofluorocarbon.

(d) Abscisic acid.

Ans :- (b) DDT.

Q.49. O_2 is converted into O_3 by the action of :

(a) Infrared radiations.

(b) Ultraviolet radiations.

(c) Gamma radiations.

(d) Cosmic radiations.

Ans :- (b) Ultraviolet radiations.

Q.50. Which of the following can not be added in a composting pit to prepare compost?

(a) Sunflower plants.

(b) Fruit and vegetable peets.

(c) Flowers of plastic.

(d) Red worms.

Ans :- (c) Flowers of plastic.

SHORT ANSWERS TYPE QUESTIONS:

Q.1. Define with examples.

(i) Biodegradable waste.

(ii) Non biodegradable waste.

Ans :- (i) Those waste materials which can be broken down to non poisonous substances in nature in due course of time by the action of micro organisms like certain bacteria are called biodegradable waste. Cattle dung and compost are common examples of biodegradable wastes.

(ii) The waste material which seen not be broken down into non-poisonous or harmless substances in nature are called non- biodegradable wastes. The examples of non-biodegradable wastes are D.D.T, Plastics etc.

Q.2. Define ecosystem. Given example?

Ans :- An ecosystem is a self-contained unit of living things like as plants, animals and decomposers and their nonliving environment like as soil, air and water. An ecosystem needs only the input of sunlight energy for its functioning. The example of ecosystems are :- a grassland, a forest, a desert, a mountain etc.

Q.3. Which are the abiotic component of an ecosystem?

Ans :- The abiotic components of an ecosystem include the physical environment like soil, water and air along with the inorganic substances like carbon di oxide, nitrogen, oxygen water, phosphorus, sulphur, sodium etc. present in then. The physical factors or climatic factors like light, temperature, pressure and humidity are also considered abiotic components of the ecosystem.

Q.4. What is biotic components of ecosystem?

Ans :- The biotic component of an eco system is a community of organisms like plants and animals which is made t inter dependent populations. The biotic community of an ecosystem includes three types of organisms.

(i) Producer organisms.

(ii) Consumer organism.

(iii) Decomposer organism.

Q.5. How an ecosystem functions as a self-sufficient or independent unit in nature?

Ans :- From the nutrient pool of the earth, carbon dioxide and water are absorbed by the producer organisms like as green plants. With the help of sunlight energy, the producer organisms convert these inorganic substances into organic compounds like carbohydrates

which act as a food. Thus producers trap the solar energy and then provide the basic food or energy for all other life forms in the ecosystem.

The consumers derive their energy needs, directly or indirectly, from producers. When the producers and consumers die, then the decomposer organisms act on their dead bodies to return the various elements back to the nutrient pool. Thus an ecosystem involves input of energy and matter which are exchanged between living and nonliving components in a cyclic process.

Q.6. Define producers. Give example.

Ans :- Producers are the organisms which can prepare their own food from simple in organic substances like carbon dioxide and water by using sunlight energy in the presence of chlorophyll, The examples of producers are green plants and certain blue-green algae.

Q.7. Define consumers. Give example.

Ans :- Those organisms which consume food prepared by producers are called consumers.

For example :- All the animals are consumers.

Q.8. Define decomposers. Give examples.

Ans :- The micro-organisms which break down the complex organic compounds present in dead organisms like dead plants and animals and their products like

faces, urine, etc. into simpler substances are called decomposers.

Examples : Certain bacteria and fungi.

Q.9. Write two important role of decomposers.

Ans :- (i) The decomposers help in decomposing the dead bodies of plants and animals, and hence act as cleansing agents of environment.

(ii) The decomposer organisms help in recycling the materials in the ecosystem so that the process of life may go on and on like an unending chain.

Q.10. What is food chain?

Ans :- The sequence of living organisms in a community kin which one organism consumes another organism to transfer food energy is called a food chain.

Q.11. Define food web.

Ans :- The interconnected food chains operating in an ecosystem which establish a network of relationships between various species, is called a food web.

Q.12. What do you mean by the term trophic level?

Ans :- The various steps in a food chain at which the transfer of food takes place are called trophic levels. Inface, in a food chain, each step representing an

organism form a trophic level. In most simple terms 'trophic level' means 'feeding level' of the organism.

Q.13. Define Ten Per Cent Law.

Ans :- According to ten per cent law, only 10 per cent of the entering a particular trophic level of organisms is available for transfer to the next higher trophic level.

Q.14. Every household produces a lot of material A daily. In one of the methods of disposal B, material A is burned at a very high temperature of about 1000°C in a structure called C. During this process, the organic matter present is removed as D and E whereas F is left energy behind.

(a) What is material A?

(b) Name the method of disposal B.

(c) What is the structure C known as?

(d) What are (i) D (ii) E and (iii) F?

(e) This method is especially suitable for the disposal of materials produced by certain institutions. Name such institutions.

Ans :- (a) Garbage.

(b) Incineration.

(c) Incinerator.

(d) (i) Carbon di oxide.

(ii) Water.

(iii) Ash.

(e) Hospitals.

Q.15. The gas A is used by most of the animals to obtain energy from food by the process of respiration. When A is gas acted upon by radiation X, it gets converted in to another B which is an allotrope of A but poisonous when inhaled. B forms a kind of layer C in the upper atmosphere which absorbs radiations X coming from a source Y and prevent them from reaching the earth. Some chemicals Z released from the various devices on the earth are destroying the layer C slowly. In fact, a hole has already been formed in layer C over the area D of the earth.

(a) What are gases

(i) A

(ii) B? Write their molecular formula .

(b) Name the layer C.

(c) What are (i) X

(ii) Y

(iii) Z ?

(d) Name the area D

(e) Name any two human ailments which may be caused by 'X

Ans :- (a) (i) Oxygen, O_2

(ii) Ozone, Oz

(b) Ozone layer.

(c) (i) Ultraviolet radiations.

(ii) Sun.

(iii) Chlorofluorocarbon.

(d) Antarctica.

(e) Skin cancer; cataract.

Q.16. At which trophic level a person is feeding when he is eating :

(a) Roasted chicken.

(b) Bread.

(c) Eggs.

(d) Apple.

(e) Fish.

Ans :- (a) 3rd trophic level.

(b) 2nd trophic level.

(c) 3rd trophic level.

(d) 2nd trophic level.

(e) 4th trophic level.

Q.17. What are the nature's cleansing agent?

Ans :- Natural cleansing agents are - microorganisms, bacteria, In algae.

Q.18. Give examples of herbivores, carnivores, omnivores and decomposers.

Ans :- Herbivores :- Camel, Deer, Cow, Rabbit.

Carnivores :- Lion, Tiger, Vultures.

Omnivores :- Monkey, Human.

Decomposers :- Insects, Bacteria, Fungi.

Q.19. What happens when an organism dies?

Ans :- The decomposers in the soil or water, act upon the dead organisms and breakdown the complex organic substances into simple inorganic compounds which go into the soil and are used up once more by the plants.

Q.20. Write one or two words for each of the following statements.

(a) Each level of food chain where transfer of energy takes place.

(b) The physical factors like temperature, rainfall, light, soil, air and water of an ecosystem.

(c) Organisms which depend on the producers for food either directly or indirectly.

(d) She physical and biological world where we live in.

(e) Self contained unit of living things and their nonliving environment needing only sunlight for its functioning.

Ans :- (a) Trophic level.

(b) Abiotic components.

(c) Consumers.

(d) Environment.

(e) Ecosystem.

Q.21. Fill in the blanks :

(i) Enzymes are --------- in their action.

(ii) Substances that are broken down by biological processes are said to be ----------.

(iii) Substances that are not broken down by biological process are said to be ----------.

(iv) Gardens and crop fields are examples of----------.

(v) The decomposers comprising microorganisms like----------.

(vi) Every food chain starts from ----------.

(vii) The flow of energy is always ---------- in food chains.

(viii) The plants trap ---------- energy and convert it into ---------- energy.

(ix) In an ecological pyramid, the base represents---------- love.

(x) In nature, all green plants are ---------- whereas animals are consumers.

Ans :- (i) Specific.

(ii) Biodegradable.

(ii) Non-biodegradable.

(iv) Artificial ecosystem

(v) Bacteria, fungi.

(vi) Producers.

(vii) Unidirectional.

(viii) Light, chemical.

(ix) Producer.

(x) producers.