Chapter 15: Our Environment

1. OBJECTIVE QUESTIONS

1. Sulphur dioxide affects
(a) haemoglobin of blood (b) Arteries
(c) Alveoli of lungs (d) Nerves

Ans : (c) Alveoli of lungs

2. Which of the following is not a functional component of an ecosystem?
(a) Communities (b) Decomposers
(c) Sunlight (d) Energy flow

Ans : (d) Energy flow

The flow of energy is not a functional component of an ecosystem.

3. Free services provided to humans by ecosystems include
(a) control of atmospheric carbon dioxide concentration
(b) prevention of soil erosion
(c) filtering of pollutants from water and air
(d) all of the above

Ans : (d) all of the above

4. Why do scientists think that human-induced global warming will be more harmful to plants and animals than were past, natural climate fluctuations?
(a) because temperatures will change faster
(b) because the temperature changes will be larger
(c) because species now are less adaptable than species in the past
(d) because ecosystems are now more complicated than they used to be

Ans : (a) because temperatures will change faster

5. As energy is passed from one trophic level to another, the amount of usable energy
(a) increases
(b) decreases
(c) remains the same
(d) energy is not passed from one trophic level to another

Ans : (b) decreases

6. Each step in a food chain is called a
(a) trophic level (b) consumer level
(c) food web (d) producer

Ans : (a) trophic level

7. CO_2 absorbs some of the ..... that radiates from the surface of earth to space
(a) ozone (b) heat
(c) food web (d) producer

Ans : (b) heat

8. The biological process by which carbon is returned to its reservoir is
(a) photosynthesis (b) de-nitrification
(c) carbon fixation (d) cellular respiration

Ans : (d) cellular respiration

9. For corrosion of metals, there should be
(a) Exposed surface of metal
(b) Moisture
(c) Air
(d) All of the above

Ans : (d) All of the above

10. The last chain of food is
(a) producers (b) decomposers
(c) parasites (d) none of the above

Ans : (b) decomposers

11. Replacing of plastic cups by the paper cups for selling tea on train is preferred because
(a) paper cups are more aesthetic
(b) paper cups are more hygienic
(c) paper cups are cheaper
(d) paper cups are biodegradable and eco-friendly

Ans : (d) paper cups are biodegradable and eco-friendly

The paper cups are preferred over plastic cups because being biodegradable they are not potential wastes.

12. Food web is the
(a) food that a spider collects using its web
(b) network of interlinked trophic levels
(c) network of interlinked food chains
(d) display of food items on a website

Ans : (c) network of interlinked food chains

A food web is a network of inter-linked food chains operating at various trophic levels.

13. In the biosphere, which of the following is the ultimate source of energy?
(a) Carbon (b) Water
(c) Sunlight (d) Nitrogen

Ans : (c) Sunlight

14. In a food chain, the snake predated as rabbit which fed on fresh green bushes. What percentage amount of the energy accumulated by rabbit, would be acquired by snakes?

(a) 90% (b) 10%

(c) 50% (d) 25%

Ans : (b) 10%

According to Lindeman's 10% energy law, only 10% of the energy is transferred from one trohic level to the subsequent trophic level.

15. The part of earth comprising water is called an

(a) atmoshphere (b) hydrosphere

(c) lithosphere (d) none of the above

Ans : (b) hydrosphere

16. Burning to waste products at high temperature to form ash, reduces waste considerably. This method of waste disposal is called

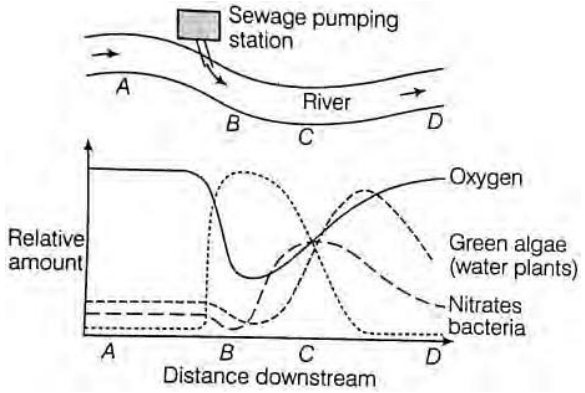
(a) composting (b) sewage treatment

(c) recycling (d) incineration

Ans : (d) incineration

Incinerators involve degradation of wastes by burning them at high temperatures.

17. The diagram shows part of a river into which sewage is being pumped. Some of the effects of adding sewage to the river are shown in the graph. At which point in the river are decomposers most active?



(a) D (b) *C*

(c) *B* (d) *A*

Ans : (c) *B*

The number of bacteria will suddenly rise near the sewage pumping station. They are effective decomposers and can breakdown complex molecules into simpler forms in sewage.

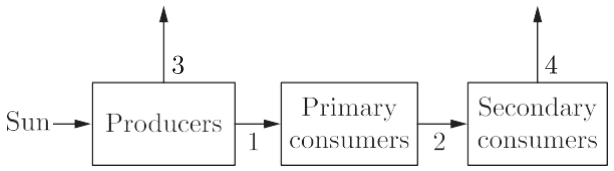
18. Individuals of any species at a place form

(a) biotic community (b) ecosystem

(c) population (d) biome

Ans : (c) population

19. The diagram shows the flow of energy through an ecosystem.



The smallest amount of energy transferred between organisms and the largest amount of energy lost to the ecosystem is represented by which arrows?

	Smallest energy transfer	**Largest energy loss**
(a)	4	3
(b)	2	1
(c)	2	3
(d)	1	4

Ans : (c)

About 90% of the chemical energy received by the rabbit is utilised for metabolic activities and lost as heat and undigested matter. Only 10% is used for the growth and formation of new tissues.

20. As a black widow spider consumes her mate, what is the lowest trophic level she could be occupying

(a) third (b) first

(c) second (d) fourth

Ans : (d) fourth

21. Human-caused changes to the nitrogen cycle are expected to result in

(a) an increase in acid rain

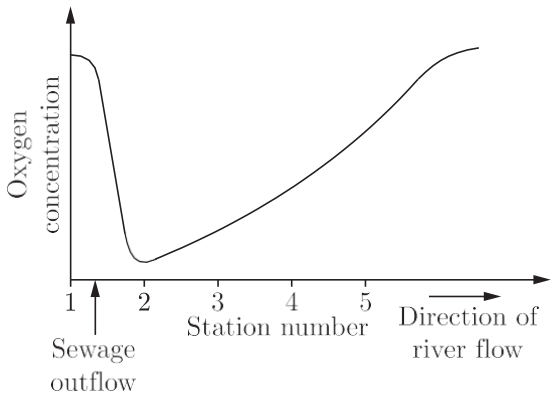
(b) an increase in the loss of species from ecosystems

(c) higher concentrations of a greenhouse gas

(d) all of the above

Ans : (d) all of the above

22. The following graph shows the concentration of oxygen in a river, measured at stations 1-5 each 100 m apart. A sewage outflow is observed just after station 1. At which stations will the concentration of organic matter be lowest?



(a) 1 and 5 (b) 2 and 3

(c) 3 and 4 (d) 4 and 5

Ans : (a) 1 and 5

Sewage contains large amounts of organic matter which is utilised as an energy source by aerobic bacteria.

At point 1, there is little consumption of oxygen by aerobic bacteria which decomposes the organic matter. At region 2 and 3, most bacterial activity occurs due to organic matter. At point 5, again there is little aerobic activity because the oxygen concentration is higher.

23. Trophic levels are formed by-

(a) only plants

(b) only animals

(c) only carnivores

(d) organisms linked in food chain

Ans : (d) organisms linked in food chain

24. Fertilisers are used on farmlands to increase the nutritive quality of soil and thus, the crop productivity. However, they greatly impact our environment in negative ways. A fertiliser industry is planning to release nitrate-free or reduced nitrate containing fertiliser to make it more environment-freindly. This control of nitrate rich fertilisers is necessary because

(a) nitrates cause acid rain, killing trees and fishes when released in the environment

(b) they decrease the natural fertility to the soil

(c) nitrates may lead to excessive growth of water plants

(d) it poisons different crop plants

Ans : (c) nitrates may lead to excessive growth of water plants

Acid rain is a result of accumulation of SO_2 and SO_3 along with NO_2 which gets converted into acids.

Nitrates are not involved in making nitric acid, rather these are essential for soil fertility. They leads to the formation of amino acids which make proteins.

25. A decrease in the grass population will most immediately decrease the available energy for the

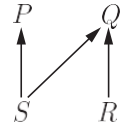
(a) mouse (b) snake

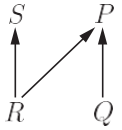
(c) hawk (d) frog

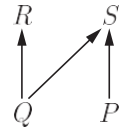
Ans : (a) mouse

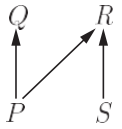
26. The diagram shows the organisms in a habitat.

Which of the following indicates the feeding relationships of these organisms?

(a) 

(b) 

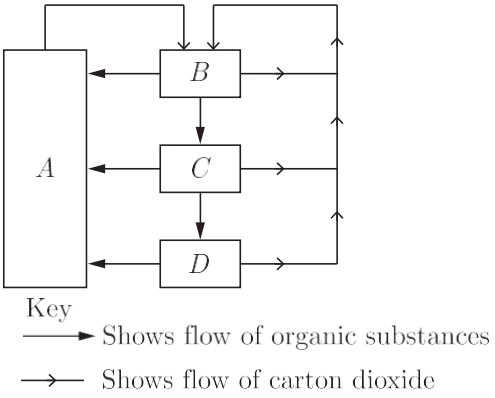
(c) 

(d) 

Ans : (c)

P and *Q* are producers. *S* is the organisms which derives its nutrition from decaying leaves of both the plants. The *R* organism gets its food only from flowering plant (*Q*).

27. The diagram represents the flow of substances within a balanced ecosystem. The boxes are various trophic levels. Which box represents the producers?



(a) ***B*** (b) ***D***

(c) ***A*** (d) ***C***

Ans : (a) ***B***

Producers carry out photosynthesis, absorb CO_2 and produce carbon compounds. All these functions are performed by ***B*** , hence it represents producers.

28. As a biologist, if you become very interested in the study of the interaction of organisms with each other and the environment your subspeciality would be

(a) Zoology (b) Ecology

(c) Botany (d) Herpetology

Ans : (b) Ecology

29. An example of a producer in the aquatic food web would be

(a) Duckweed (b) Ducks

(c) Fish (d) Insects

Ans : (a) Duckweed

30. In an ecosystem green plants are known as

(a) primary consumers (b) secondary consumers

(c) producers (d) tertiary consumers

Ans : (c) producers

31. Sun gives radiations in the form of
(a) Infra-red radiation (b) Arteries
(c) Alveoli of lungs (d) Nerves
Ans : (d) Nerves

2. FILL IN THE BLANK

1. The waste we generate may be ..... or .....
Ans : Biodegradable, non-biodegradable.

2. ..... is defined as sum total of all conditions and influences that affect the life of organisms.
Ans : Environment

3. Substances that are broken-down by biological processes are said to be .....
Ans : Biodegradable

4. Substances that are not broken-down by biological processes are said to be .....
Ans : Non-biodegradable

5. All the interacting organisms in an area together with the non-living constituents of the environment form an .....
Ans : Ecosystem

6. Gardens and crop fields are examples of .....
Ans : Artificial Ecosystem

7. Organisms can be grouped as producers, consumers and ..... according to the manner in which they obtain their substances from the environment.
Ans : Decomposers

8. The decomposers comprising micro-organisms like ..... and .....
Ans : Bacteria, Fungi

9. The materials which are locked up in dead complex organic substance are made available to plants in the form of simple inorganic substances by the .....
Ans : Decomposers

10. Every food chain starts from ..... .
Ans : Producers

11. The energy flows from autotrophs to the heterotrophs and ..... .
Ans : Decomposers

12. The flow of energy is always ..... in food chains.
Ans : Unidirectional

13. The inter locking pattern of various food chains is referred as ..... .
Ans : Food Web

14. The disposal of the waste we generate is causing serious ..... problems.
Ans : Environmental

15. Climate refers to the prevailing ..... conditions.
Ans : Weather

16. The total amount of ..... per unit time produced in an ecosystem is called the gross primary productivity.
Ans : Organic material

17. The hierarchies within a food web are called ..... levels.
Ans : Trophic

18. Without the ..... in a food web many chemicals would not be recycled.
Ans : Decomposers

19. Because there is a loss of energy at each trophic level ..... biomass can be supported at each successive level.
Ans : Less

20. The contamination of air by adding gases, smoke and ash is called .....
Ans : Pollution

21. Burning of fossil fuels is the main cause of release of ..... gas in air.
Ans : Carbon dioxide

22. It is ..... to sleep in closed room with a coke fire burning.
Ans : Dangerous

23. Decrease in ozone in stratosphere is linked to release of synthetic chemicals like .....
Ans : Chlorofluorocarbons

24. Improvement in life style often results in increased generation of ..... material.
Ans : Waste

25. The ..... make the energy from sunlight available to the rest of the ecosystem.
Ans : Producers

26. The use of chemicals like CFCs has endangere the ..... layer.
Ans : Ozone

27. Total number of individuals of any species at a place is known as .....
Ans : Population

28. The various populations of living organisms in an area together form ..... .
Ans : Biotic community

29. ..... absorb UV rays and protect the earth.
Ans : Ozone layer

30. All the ecosystems taken together in a geographical area form a bigger unit known as.
Ans : Biome

31. ..... absorb UV rays and protect the earth.
Ans : Ozone layer

32. Hydrosphere, lithosphere and atmosphere along with living organism form ..... .
Ans : Biosphere

33. The sequential process of one organism consuming the other forms a ..... .
Ans : Food chain

34. ..... act as scavengers of environment.
Ans : Decomposers

35. The two important functions that food chains depict are transfer of ..... and ..... .
Ans : Energy, materials

36. Decrease in ozone concentration has been linked to synthetic chemicals like ..... which are used as ..... in the refrigerators.
Ans : chlorofluorocarbons, refrigerants

37. The plants trap ..... energy and convert it into ..... energy.
Ans : Light, chemical

38. ..... and ..... are the biotic components of ecosystem.
Ans : Plants, animals

39. The energy available at each successive trophic level is ..... of the previous level.
Ans : 10%

40. The physical and biological world where we live in is called .....
Ans : ecosystem

41. In an ecological pyramid, the base represents ..... level.
Ans : Producer

42. Harmful by products of fertiliser industries are ..... and .....
Ans : SO_2, NO

43. In nature, all green plants are ..... whereas animals are consumers.
Ans : Producers

44. The physical factors like temperature, rainfall, wind and soil of an ecosystem are the ..... factors.
Ans : abiotic

45. Nitrogen-fixing bacteria live in nodules on the roots of ..... plants.
Ans : Leguminious

46. Nitrates and nitrites present in the soil are changed into ..... by micro-organisms.
Ans : Ammonia

47. The increased nitrogen in rivers and lakes boosts the growth of ..... and other phytoplankton at the cost of other aquatic organism.
Ans : Algae

48. The amount of various chemical materials cycling through the biosphere more or less remains ..... .
Ans : Constant

49. Ozone is a molecule formed by ..... of .....
Ans : oxygen, atmosphere

50. Waste substances that are broken down by microbes are called .....
Ans : Biodegradable

3. TRUE/FALSE

1. The energy takes place from autotroph to the heterotrophs.
Ans : True

2. Secondary consumers in food chain are always carnivores.
Ans : True

3. Forests, and ponds are natural ecosystem while gardens and fields are artifical ecosystem.
Ans : True

4. The inter locking pattern of various food chains is referred as food web.
Ans : True

5. Carbon dioxide causes depletion of ozone layer thereby allowing more UV-radiations to reach the earth.
Ans : False

6. Biodegradable wastes should be separated and kept in blue colour bins for garbage collectors.
Ans : False

7. Phytoplanktons are primary consumers.
Ans : False

8. UNEP has foraged an agreement to freeze CFC

production.
Ans : True

9. An ecosystem consists of biotic and abiotic components.
Ans : True

10. Different materials are not cycled in the environment.
Ans : False

11. Specific enzymes are needed for the break-down of a particular substance.
Ans : True

12. Forests, and ponds are natural ecosystem while gardens and fields are artifical ecosystem.
Ans : True

13. Wastes are of two types, biodegradable and non-biodegradable.
Ans : True

14. Non-biodegradable articles are the ones which cannot be digested.
Ans : True

15. Organism can make organic compounds from inorganic substances by using the radiant energy of the sun in the presence of chlorophyll.
Ans : True

16. Ecology is the scientific study of the interaction of organisms with each other and the environment.
Ans : True

17. The abiotic components of the environment are the living factors.
Ans : False

18. An ecosystem is made up of one type of community.
Ans : False

19. In general, food webs consist of producers, consumers, and decomposers.
Ans : True

20. Earth is kept warm due to green house flux.
Ans : True

21. Rag pickers remove reusable articles.
Ans : False

22. Forests, and ponds are natural ecosystem while gardens and fields are artifical ecosystem.
Ans : True

23. Blue green algae are producers.
Ans : True

24. Decomposers reduce the fertility of soil.
Ans : False

25. The amount of usable energy remains constant as it is passed from one trophic level to another.
Ans : False

26. The energy within an ecosystem is fixed and never changes.
Ans : False

27. Ozone is formed in stratosphere by action of ultraviolet radiations on oxygen.
Ans : True

28. Forests, and ponds are natural ecosystem while gardens and fields are artifical ecosystem.
Ans : True

29. The reproduction and other activities of living organisms are affected by the abiotic components of ecosystem.
Ans : True

30. The materials like plastics are not acted upon by physical process.
Ans : False

31. Decomposers reduce the fertility of soil.
Ans : False

32. Food ensures survival of all types of trophic levels.
Ans : True

33. Human population and technology are having a destructive impact on the biosphere.
Ans : True

4. MATCHING QUESTIONS

DIRECTION : Each question contains statements given in two columns which have to be matched. Statements (A, B, C, D) in column-I have to be matched with statements (p, q, r, s) in column II.

1.

Column I		Column II	
(A)	Tundra	(p)	This area on the planet has perma-nently frozen soil that does not allow for the growth of large plants.

Column I		Column II	
(B)	Grassland	(q)	This area on the planet has few trees, very fertile soil and usually many species of grasses. The rainfall amounts are low and the rain is more abundant during the summer months.
(C)	Tropical rainforest	(r)	This biome is usually located near the equator. Rainfall amounts are very high, vegetation is dense and soil quality is poor.
(D)	Savanna	(s)	A type of grassland biome that experiences rainy seasons and long periods of drought.

Ans : A-p- B-q, C-r, D-s

2.

Column I		Column II	
(A)	Grass	(p)	Primary carnivore
(B)	Grasshopper	(q)	Secondary carnivore
(C)	Frog	(r)	Producer
(D)	Hawk	(s)	Primary consumer

Ans : A-r, B-s, C-p, D-q

3.

Column I		Column II	
(A)	Eastern Ghats	(p)	Western and Eastern
(B)	Estuarine ecosystem	(q)	Rajasthan, Punjab and part of Gujarat
(C)	Indus plains	(r)	West Bengal and Andman Nicobar
(D)	Arctie zone	(s)	Cape Comarine to Gujarat

Ans : A-s, B-r, C-q, D-p

4.

Column I		Column II	
(A)	Third trophic level	(p)	Ozone
(B)	Accumulation of pesticides at higher trophic level	(q)	CFCs
(C)	Green plants	(r)	Herbivore
(D)	Flow of energy in an ecosystem	(s)	Biomagnification
(E)	Consists of 3 atoms of oxygen	(t)	Decomposers
(F)	Main cause of depletion of depletion of ozone layer	(u)	Producers
(G)	Second trophic level	(v)	Unidirectional
(H)	Break-down of dead organic compounds	(w)	Carnivores

Ans : A-w, B-s, C-u, D-v, E-p, F-q, G-r, H-t

5.

	Column I		Column II
(A)	Filament of electrical bulb	(p)	Copper
(B)	Heating elements	(q)	Lead-tin alloy
(C)	Connection wire	(r)	Tungsten
(D)	Fuse wire	(s)	Nichrome

Ans : A-r, B-s, C-p, D-q

5. ASSERTION AND REASON

DIRECTION : In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

(c) Assertion (A) is true but reason (R) is false.

(d) Assertion (A) is false but reason (R) is true.

(e) Both Assertion and Reason are false.

1. **Assertion :** Green plants of the ecosystem are the transducers.
Reason : Producers trap the radiant energy of the sun and change it into chemical energy.

Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

2. **Assertion :** Aquariums are known as the man-made ecosystems.
Reason : Aquariums are created and maintained by humans.

Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

Aquariums are known as the man-made ecosystems because these are created and maintained by humans.

3. **Assertion :** Flow of energy in a food chain is unidirectional.
Reason : Energy captured by autotrophs does not revert back to the solar input and it passes to the herbivores.
Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

The flow of energy through different steps in the food chain is unidirectional. This means that energy captured by autotrophs does not revert back to the solar input and it passes to the herbivores.

4. **Assertion :** Biomagnification is caused due to the accumulation of biodegradable toxicants in organisms at each successive trophic level.
Reason : Biomagnification leads to the maximum accumulation of chemicals in small fishes.
Ans : (e) Both Assertion and Reason are false.

Biomagnification is caused due to the accumulation of non-biodegradable toxicants in organisms at each successive trophic level. The maximum concentration of these chemicals gets accumulated in human body because they occupy the topmost place in any food chain.

5. **Assertion :** Animals adopt different strategies to survive in hostile environment.
Reason : Praying mantis is green in colour which merges with plant foliage.
Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

Animals blend with the surroundings or background to remain unnoticed for protection and aggression.

6. **Assertion :** A network of food chains existing together in an ecosystem is known as food web.
Reason : An animal like kite cannot be a part of a food web.
Ans : (c) Assertion (A) is true but reason (R) is false.

In the food web different food chains are interconnected. Each chain consists of different trophic levels i.e., producers, consumers and detrivoroes. So, kite can also be a part of food web

7. **Assertion :** CFCs deplete the ozone layer.
Reason : CFCs are used as refrigerants and in fire extinguishers.
Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

Ozone layer is getting depleted at the higher levels of the atmosphere due to effect of chlorofluorocarbons (CFCs) which are used as refrigerants and in fire extinguishers.

8. **Assertion :** The concentration of harmful chemicals is more in human beings.
Reason : Man is at the apex of the food chain.
Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

Harmful chemicals accumulate progressively at each trophic level. Since the man is at the apex of all the food chains, the concentration of harmful chemicals may be more in human beings. The phenomenon involved is known as biomagnification.

9. **Assertion :** The crown fires are most destructive as they burn the tree top.
Reason : Due to crown fire the temperature of that area may rise upto 700cC.
Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

10. **Assertion :** Tropical rain forests are disappearing fast from developing countries such as India.
Reason : No value is attached to these forests because these are poor in biodiversity.
Ans : (c) Assertion (A) is true but reason (R) is false.

Tropical rain forests have disappeared mainly due to man's activities. Due to over population in countries like India, rain forests are cut to make place available for man to live and build houses. To build buildings and factories man has incessantly cut down trees. This has caused the depletion of rain forests.

11. **Assertion :** Abiotic component of an ecosystem involves cycling of material and flow of energy.
Reason : This is essential to keep biotic factors alive.
Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

12. **Assertion :** First trophic level in a food chain is always a green plant.
Reason : Green plants are called producers.
Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

Green plants are producers. The first trophic level in a food chain is a producers i.e. those organisms which produce food by photosynthesis.

13. **Assertion :** Man is a herbivore.
Reason : Omnivores eat both plant food and meat of animals.
Ans : (d) Assertion (A) is false but reason (R) is true.

14. **Assertion :** In an ecosystem, the function of producers is to convert organic compounds into inorganic compounds.
Reason : Green plants, the producers, transduce solar energy.
Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

15. **Assertion :** Trophic levels are formed by only plants.
Reason : Food chains and webs are formed due to linked organisms on the basis of their nutrition.

Ans : (d) Assertion (A) is false but reason (R) is true.

16. **Assertion :** Herbivores are called first order consumers.
Reason : Tiger is a top carnivore.

Ans : (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

Herbivores obtain their food from plants. Hence, are known as first order carnivores. The carnivores like tiger cannot be preyed upon further, lie at the top of food chain and hence termed as top carnivores.

17. **Assertion :** Ecology is study of relationship between living organisms and their environment.
Reason : The biotic community and non-living environment of an area function together to form an ecosystem.

Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

18. **Assertion :** Polythene bags and plastic containers are non-biodegradable substance.
Reason : They can be broken down by micro-organisms in natural simple harmless substances.

Ans : (c) Assertion (A) is true but reason (R) is false.

Substances like polythene bags and plastics are non-biodegradable because they cannot be broken down by micro-organisms into simpler harmless substance in nature. Substance that can be broken down by micro-organisms in natural simple harmless susbstances are biodegradable substances.

19. **Assertion :** Consumers are present at the first trophic level.
Reason : Consumers or heterotrophs fix energy making it available for autotrophs.

Ans : (e) Both Assertion and Reason are false.

Autotrophs are present at the first trophic level because they fix solar energy, making it available for consumers or heterotrophs.

20. **Assertion :** Aquatic food chain is the food chain present in water bodies.
Reason : The example of aquatic food chain is phytoplankton $\rightarrow$ zooplankton $\rightarrow$ fish $\rightarrow$ shark.

Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

Aquatic food chain is the food chain present in water bodies, e.g. phytoplankton $\rightarrow$ zooplankron $\rightarrow$ fish $\rightarrow$ shark.

21. **Assertion :** Decomposers keep the environment clean.
Reason : They recycle matter by breaking down the organic remains and waste products of plants and animals.

Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

Decomposers keep the environment clean by decomposing or consuming the dead remains of other organisms.

22. **Assertion :** Ozone is both beneficial and damaging.
Reason : Stop the release of chlorofluorocarbons to protect the ozone.

Ans : (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

Ozone is damaging as it is a deadly poison. It is beneficial as it shields the surface of the earth from UV radiations of the Sun. We should stop the release of Chlorofluorocarbons (CFCs) to protect the ozone.

23. **Assertion :** Garden is an artificial ecosystem.
Reason : Biotic and abiotic components are manipulated by humans.

Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

24. **Assertion :** Supersonic jets cause pollution as they thin out ozone.
Reason : Depletion of ozone cause green house effect.

Ans : (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

25. **Assertion :** Biotic components of ecosystem continuously require energy to carry on life processes.
Reason : Abiotic comonents are the non-living factors of the ecosystem.

Ans : (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

26. **Assertion :** Decomposers act as cleaning agents of the environment.
Reason : The decomposers recycle waste material in the hydrosphere.

Ans : (c) Assertion (A) is true but reason (R) is false.