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Q1. What is meant by non-biodegradable waste? Identify biodegradable waste from the following:
Empty packet of chips, empty bottle of mineral water, empty paper box of sweets, empty tin of a cold drink.

Q2. State two methods to get rid of non-biodegradable wastes.

Q3. State the function of digestive enzymes.

Q4. What is meant by the term Environment?

Q5. Name any two non-biodegradable wastes.

Q6. Name any two biodegradable wastes.

Q7. Which of the following are biodegradable?
(a) Wool, glass, silver foil, leather.
(b) Leather shoe, earthen pot, silver spoon, jute bags.
(c) Tomato leaves, aluminium wire, synthetic fibre, wool.

Q8. Which of the following materials are biodegradable?
(a) Glass, glucose, leather, silver foil, nylon cloth.
(b) Detergents, coconuts, leather, polythene, glass.

Q9. Which two of the following are non-biodegradable?
(a) Detergents, coconut, leather, cotton fabric, glass.
(b) Eggshell, butter, detergents, leather, silver foil.

Q10. Construct an aquatic food chain ending with shark.

Q11. How do autotrophs obtain CO_2 and N_2 to make their food?

Q12. Name any two abiotic components of an environment.

Q13. What advantage over an aquatic organism does a terrestrial organism have with regard to obtaining oxygen for respiration?

Q14. Where do plants get each of the raw materials required for photosynthesis?

Q15. Which of the following belonging to a food chain is likely to have maximum concentration of harmful chemicals in its body?
(a) Kingfisher, zooplankton, fish, phytoplankton.
(b) Peacock, frog, snake, grasshopper.
(c) Frog, hawk, grasshopper, snake.
(d) Small fish, zooplankton, birds, phytoplankton.

Q16. Which two of the following belong to the same trophic level?
(a) Grasshopper, frog, grass lizard (b) Goat, grass, crow, squirrel

Q17. Rearrange the following according to their ascending tropic level in a food chain:

Hawk, Grass, Snake, Rabbit.

Q18. If a harmful chemical enters a food chain comprising fishes, phytoplanktons and birds, which of the organisms is likely to have minimum concentration of the harmful chemical in the body?

Q19. In the following food chain 20 J of energy was available to the hawks. How much would have been present in the plants?

Plants ⟶ Rats ⟶ Snakes ⟶ Hawks.

Q20. If a harmful chemical enters a food chain comprising snakes, peacock, mice and plants, which of these organisms is likely to have the maximum concentration of this chemical in its body?

Q21. In a food chain comprising lion, grass and deer, which will

(a) transfer the maximum amount of energy? (b) receive minimum amount of energy?

Q22. Rearrange the following according to their trophic levels in a food chain:

Fish, Zooplankton, Seal, Phytoplankton.

Q23. Give the technical terms for the graphic representation of the trophic structures in a food chain.

Q24. Name any two carnivores.

Q25. Name any two omnivores.

Q26. Which two of the following belong to the second trophic level?

(a) Frog, butterfly, spider, rice weevil.

(b) Parrot, frog, butterfly, spider.

Q27. Which two of the following belong to the first trophic level?

(a) Grasshopper, rose plant, neem tree, cockroach.

(b) Sunflower plant, grasshopper, cockroach, banyan tree.

Q28. State one difference between autotrophs and heterotrophs.

Q29. Write a food chain in a forest ecosystem.

Q30. Which food habits give us more energy?

Vegetarian or Non-vegetarian.

Q31. Which organisms belong to third and fourth trophic levels in the food chain comprising the following?

Rats, Plants, Hawks, Snakes.

Q32. Which one of the following is not a part of the biotic environment?

(a) Water, algae, fish bacteria (b) Insects, air, plants, birds (c) Man, air, trees, insects

Q33. What are zooplanktons?

Q34. What are phytoplanktons?

Q35. Give an example of an organism that acts as prey as well as predator in a food chain.

Q36. Which of the following is not a terrestrial ecosystem?

Forest, Grassland, Aquarium, Desert.

Q37. Write the food chain of a non-vegetarian.

Q38. In comparing the two ecosystems *A* and *B*, it is observed that *A* has only first and second order consumers, while *B* has third, fourth and fifth order consumers. which of the two would be more stable?

Q39. Mention one negative effect of our affluent life style on the environment.

Q40. Why has there been huge hue and cry against the use of CFCs?

Q41. Name the radiations from the sun that are absorbed by ozone layer. Mention one harmful effect caused by them.

Q42. Select from the following substances which have posed a threat to the environment:

Aerosols, consumers, bacteria, CFCs.

Q43. Name the group of chemical compound which adversely affects the ozone layer.

Q44. Why is ozone layer getting depleted at the higher levels of the atmosphere?

Q45. Name the disease which is likely to be caused if the ozone layer gets depleted.

Q46. Name any two wastes that can be recyled and reused.

Q47. During heavy rains in a village, rain water carried excessive nitrogen compounds to a pond. How will it affect the growth of fish in the pond in the long run?

Q48. What is the advantage of disposable cup over a plastic cup?

Q49. What is biodegradable waste? If all the waste we generate is biodegradable? What impact may this have on the environment?

Q50. In a certain study conducted on occurrence of DDT along food chains in an ecosystem, the concentration of DDT in grass was found to be 0.5 ppm (parts per million) in sheep it was 2 ppm and in man it was 10 ppm. Why was the concentration of DDT maximum in case of man?

Q51. Draw a line diagram to show flow of solar energy in ecosystem.

Q52. Define a food web. State its significance for ecosystem.

Q53. What are decomposers? Write the role of decomposers in the environment.

Q54. What is biological magnification? If the concentration of DDT were 0.2 ppm in the water of a lake, what would be its likely concentration in fish in the following food chain?

Algae, Zooplankton, Small fish, Big fish.

Q55. How do food chains get shortened? How does this shortening affect the biosphere?

Q56. Give an example of food chain consisting of four organisms at different trophic levels. Give the scientific term used to indicate the first and third trophic levels.

Q57. What would happen if all the decomposers were eliminated from the Earth? Explain.

Q58. Mention the difference between food habits of organisms belonging to the first and the third trophic levels. Give one example of each of them.

Q59. Consider the food chain:

Grass $\longrightarrow$ Deer $\longrightarrow$ Lion.

What will happen, if the lions are removed from the above food chain?

Q60. The use of DDT is discouraged since the chemical is found in human body. How does this chemical enter our body?

Q61. Which food chains are advantageous in terms of energy? Support your answer giving one example.

Q62. Why we say that energy flow in the biosphere is unidirectional?

Q63. Give two main differences between a food web and food chain.

Q64. "All the flesh of a carnivore is grass." Justify the statement.

Q65. "Man is only a consumer." Justify the statement.

Q66. The amount of energy that is available to the plants from the Sun is 200000 J. Calculate the amount of energy available to the lion in the following food chain:

Plant ⟶ Deer ⟶ Lion.

Q67. Calculate the amount of energy available to big fish in the following food chain, if 10000 J energy is available to small algae from the Sun

Small algae ⟶ Zooplankton ⟶ Small fish ⟶ Big fish

Q68. Given below is a food chain:

Grass ⟶ Grasshopper ⟶ Frog ⟶ Snake ⟶ Peacock.

What will happen to the members of different trophic levels in the food chain, if all the frogs of that area are removed?

Q69. With the knowledge of energy transfer in the food chain, man can place himself in an advantageous position in the food cahin. Explain.

Q70. The shortening of food chains due to man's activities leads to imbalance in the functioning of an ecosystem. Explain this statement keeping the formation of Sahara desert as an example.

Q71. State one important function of ozone layer in the atmosphere. How is it formed there? Which compounds are responsible for the depletion of ozone layer? How do these compounds enter into the atmosphere?

Q72. The term producer for plants is misnomer. Explain why?

Q73. How does natural replenishment of soil take place?

Q74. Write the food chain operation in a fresh water pond. Mention the food habit of each trophic level in this food chain.

Q75. Explain how does making of *kulhads* affect our environment?

Q76. List any four suggestions you would make to your friends to make them more environment friendly.

Q77. Describe any four modes of disposal of waste.

Q78. State any four environmental problems caused by man.

Q79. What gives rise to various environmental problems? How can these problems be visualised?

Q80. Distinguish between biodegradable and non-biodegradable substances. List two effects of each of them on the environment.

Q81. (a) What is environmental pollution?

(b) Distinguish between biodegradable and non-biodegradable pollutants.

(c) Choose the biodegradable pollutants from the list given below:

Sewage, DDT, radioactive waste, agricultural waste.

Q82. Differentiate between autotrophs, heterotrophs and decomposers and give one example of each.

Q83. (a) What is an ecosystem? List its two main components.

(b) We do not clean ponds or lakes, but an aquarium needs to be cleaned regularly. Explain.

Q84. Why are bacteria and fungi called decomposers? List two advantages of decomposers.

Q85. (a) Distinguish between producers and decomposers.

(b) Classify the following as producers and decomposers:

Green plants, Bacteria, Fungi, Blue-green algae.

Q86. (a) Name the process by which autotrophs prepare their own food.

(b) List the three events which occur during the process.

(c) State two sources from which plants obtain nitrogen for the synthesis of proteins and other compounds.

Q87. (a) State two differences between autotrophic nutrition and heterotrophic nutrition.

(b) Give one example of each of these nutrition.

Q88. What is ten per cent law? Explain with an example how energy flows through different trophic levels.

Q89. "Vegetarian food habits can sustain a larger number of people". Justify the statement in terms of food chain.

Q90. What is food chain? How does the study of food chain in an area or habitat help us? Give an example of four-step food chain operating in a large lake.

Q91. (a) What is meant by garbage management?

(b) Suggest four methods to manage the garbage.

Q92. "Damage to the ozone layer is a cause of concern." Justify this statement. Suggest any two steps to limit this damage.

Q93. How would you dispose the following wastes?

(a) Domestic wastes like vegetable peels. (b) Industrial wastes like metallic cans.

(c) Plastic materials.

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S1. Substances that do not breakdown by biological process are called non-biodegradable.
Empty paper box of sweets is biodegradable.

S2. We should carry cloth bags when we go for shopping. Non-biodegradable waste should be collected separately and sent for recycling.

S3. Digestive enzymes breakdown the food into small and water soluble molecules.

S4. Environment is the sum total of all external conditions and influences that affect the life and development of an organism. Environment includes all the physical or abiotic and biological or biotic factors.

S5. DDT and polythene bags.

S6. Cloth and paper.

S7. (a) Wool and leather.
(b) Leather shoe, earthen pot and jute bags.
(c) Tomato leaves and wool.

S8. (a) Glucose, leather (b) Coconuts and leather.

S9. (a) Detergents and glass. (b) Detergents and silver foil.

S10. Plankton ⟶ Crab ⟶ Fish ⟶ Shark.

S11. Autotrophs obtain CO_2 from atmosphere and N_2 from the soil.

S12. Soil and water.

S13. The aquatic organisms use oxygen dissolved in water while terrestrial organisms obtain it from the atmosphere.

S14. Plants get carbon dioxide from the atmosphere and nitrogen from the soil for photosynthesis.

S15. (a) Kingfisher (b) Peacock (c) Hawk (d) Birds

S16. (a) Frog and lizard (b) Goat and squirrel

S17. Grass ⟶ Rabbit ⟶ Snake ⟶ Hawk.

S18. Phytoplanktons.

S19. Plants ⟶ Rats ⟶ Snake ⟶ Hawks
20000 J 2000 J 200 J 20 J (According to 10% law).

S20. Peacock.

S21. (a) Grass (b) Lion

S22. Phytoplankton ⟶ Zooplankton ⟶ Fish ⟶ Seal.

S23. Energy pyramid.

S24. Tiger and lion.

S25. Cockroach and crow.

S26. (a) Butterfly and rice weevil (b) Parrot and butterfly

S27. (a) Rose plant and neem tree (b) Sunflower plant and banyan tree

S28. Autotrophs make their own food by the process of photosynthesis. Heterotrophs cannot make their own food. They depend upon autotrophs or other heterotrophs for food.

S29. Grass $\longrightarrow$ Deer $\longrightarrow$ Lion.

S30. Vegetarian food chain gives us more energy as it is shorter than non-vegetarian food chain.

S31. Snakes and hawks belong to third and fourth trophic levels respectively.

S32. (a) Water (b) Air (c) Air

S33. Aquatic animals which are microscopic, free floating and depend upon phytoplanktons for their food are called zooplanktons.

S34. Aquatic plants which are microscopic, free floating and act as producers in the aquatic ecosystem are called phytoplanktons.

S35. Frog is a predator for insects and a prey for snakes.

S36. Aquarium is not a terrestrial ecosystem.

S37. Grass $\longrightarrow$ Goat $\longrightarrow$ Man.

S38. Ecosystem *A* will be more stable because it has a fewer number of trophic levels.

S39. Our activities in our affluent life style pollute the environment.

S40. CFCs on reaching the upper layer of atmosphere causes ozone layer depletion and allows UV rays to enter Eaarth's atmosphere.

S41. Ultraviolet radiations are absorbed by ozone layer.
Ultraviolet radiations cause skin cancer.

S42. Aerosols, CFCs.

S43. CFC (chlorofluorocarbon).

S44. Depletion of ozone layer is due to the use of chlorofluorocarbons which are used as refrigerants and in fire extinguishers.

S45. Skin cancer.

S46. Glass and plastic articles coming out as industrial waste can be recycled and reused.

S47. Excess nitrogen compounds in a pond produce excess of algae. It leads to oxygen depletion in water resulting in the death of fishes.

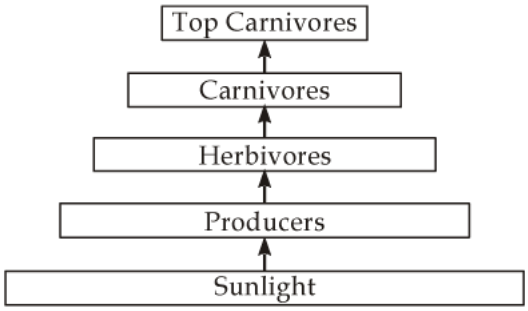
S48. It is for hygienic reasons that we prefer a disposal cup over a plastic cup.

S49. Wastes which can be degraded (decomposed) by microorganisms like fungi and bacteria are called biodegradable wastes.

If all the waste that we generate is biodegradable, it will keep accumulating as the microorganisms will not be able to degrade the whole of it in a short time. That will result in insanitation, bad odour and will create a breeding ground for files and mosquitoes.

S50. DDT is non-biodegradable. It accumulates at each trophic level. As man is positioned at the highest trophic level, there is maximum accumulation of DDT in man. This phenomenon is called biological magnification.

S51.



S52. A system of food chains which are interconnected between various organisms is called a food web. The significance of food web is in the maintenance of ecological balance based upon interdependence of different organisms.

S53. Decomposers are microorganisms which break up the dead complex organic matter into simple inorganic substances.

Role of decomposers:

(a) They return the nutrients to the soil.

(b) They help in completing the biogeochemical cycle and maintain the ecological system.

S54. The process of increase of concentration of harmful chemicals like pesticides from first trophic level to the last trophic level in a food chain is called biological magnification.

Concentration of DDT in fish:

Algae	⟶	Zooplankton	⟶	Small fish	⟶	Big fish
0.2 ppm		2 ppm		20 ppm		200 ppm

S55. Food chains get shortened by human activities like cutting of trees and hunting of wild animals. This disturbs the ecological balance. There is a large increase in the number of some species while there is a large decrease in the number of individuals of another species.

S56.

Grass	⟶	Rat	⟶	Snake	⟶	Peacock
1st trophic level		2nd trophic level		3rd trophic level		4th trophic level

First trophic level: Producer

Second trophic level: Consumer.

S57. If all the decomposers were eliminated from the Earth, then there will be no agency to decompose dead bodies of animals and plants. We shall see heaps of dead animals and plants. They would start giving foul smell and it would become impossible to live on the Earth.

S58. **First trophic level:** These are producers and transfer solar energy of the Sun into chemical energy. **Example:** Green plants like grass.

Third trophic level: These are carnivores (consumers) and depend upon other animals for food. **Example:** lion.

S59. There will be no predators to kill the deer in case the lions are removed from the food chain. This will result in increase in the population of deers. This will put pressure on the availability of grass.

S60. DDT enters the human body through the food chain by a process called biomagnification. It gets accumulated at every successive trophic level attaining maximum concentration in the top most trophic level.

S61. Vegetarian food chains are advantageous in terms of energy because it has smaller number of trophic levels. 90% of energy is lost at each tropic level. Therefore, the energy left at the next level is much less.

Plants	$\xrightarrow[\text{is lost}]{900\text{ J}}$	Goat	$\xrightarrow[\text{is lost}]{90\text{ J}}$	Man
1000 J as food		100 J as food		10 J as food

S62. The energy captured by autotrophs does not revert back to solar system. It passes to the herbivores and from there to the carnivores. The energy lost goes to the atmosphere. Thus, energy flow from the Sun through the producer to the consumer is in one dimension only. This flow cannot be reversed.

S63. (a) Food web is a network of different food chains which is a complex matter while there are comparatively simpler food chains of different trophic levels.

(b) In food web, an organism can occupy more than one trophic level while it can occupy only one trophic level in a food chain.

S64. Carnivores derive their foods from the flesh of herbivores. Herbivores derive their food from the plants. This justifies the statement "All the flesh of a carnivore is grass".

S65. Man is omnivorous. He has enough power and means to protect himself from the attack of animals. Thus, he is not consumed by other carnivores. This justifies the statement "Man is only a consumer".

S66.

Plant	$\longrightarrow$	Deer	$\longrightarrow$	Lion
2000 J		200 J		20 J

Thus, 20 J of energy is available to the lion. It may be noted that plants consume only 1% of the energy received from Sun. Further transmission takes place at the rate of 10%.

S67.

Small algae	$\longrightarrow$	Zooplankton	$\longrightarrow$	Small fish	$\longrightarrow$	Big fish
100 J (1% of 10000 J)		10 J (10% of 100 J)		1 J (10% of 10 J)		0.1 J (10% of 1 J)

According to 10 per cent law, energy available to big fish is 0.1 J.

S68. If all the frogs of that area are removed, it will lead to the following:

(a) The population of grasshopper will increase.

(b) The quantity of grass will decrease because of over population of grasshoppers.

(c) Population of snake will decrease by death or by migration.

(d) The ecological balance will be disturbed.

S69. When man takes vegetarian food, he gets more calories. Farther is he away from the producer level, less the calories available. At every next trophic level, 90% of energy is lost to the surroundings.

S70. The shortening of food chains leads to imbalance in the ecosystem. Sahara desert was formed as a result of overgrazing by herbivores. This happened because the Romans captured the lions. As there were no predators, the herbivores increased in number resulting in overgrazing and the desert was created.

S71. Ozone layer prevents harmful ultraviolet radiations to reach Earth's atmosphere.

Ozone is formed at the higher level of atmosphere by the action of UV radiations on O_2 molecule. High energy UV radiations split apart some oxygen molecules into atomic oxygen which react with molecular oxygen to form ozone molecules as shown by the following equations:

$$O_2 \xrightarrow{UV} O + O$$

$$O_2 + O \longrightarrow \underset{\text{Ozone}}{O_3}$$

Chlorofluorocarbons are responsible for the depletion of ozone layer. These compounds which are used in refrigerators and fire extinguishers get leaked during manufacture or repair and go up high into the atmosphere.

S72. Plants convert the energy of the Sun into food. They take the raw materials from the biosphere and energy of the Sun and prepare the food by a process known as photosynthesis. In fact, plants only convert solar energy into chemical energy and do not, in real sense, synthesise food.

S73. Microorganisms such as bacteria and fungi decompose dead remains of plants and animals into simple inorganic substances that go into the soil and replenish the soil.

S74. Food chain of a fresh water pond may be represented as:

Algae	⟶	Zooplankton	⟶	Small fish	⟶	Big fish
1st trphic level		2nd trophic level		3rd trophic level		4th trophic level

Food habits of each trophic level:

First trophic level ⟶ Auotrophic (Producers)

Second trophic level ⟶ Herbivores

Third trophic level ⟶ Carnivores

Fourth trophic level ⟶ Carnivores.

S75. A lot of soil is needed for making *kulhads*. It results in large scale depletion of top fertile soil.

Moreover, disposal of used *kulhads* is not so easy.

S76. (a) Reduce the use of energy source. Switch off unnecessary fans and lights.

(b) Recycle paper, plastic, glass and metal.

(c) Reuse the articles. Polythene bags and paper envelops can be used again.

(d) Take environment friendly decision while planning an activity keeping in mind how much energy will be used.

S77. (a) **Land fills:** This method is used to bury the solid waste in low-lying areas to level the uneven ground.

(b) **Recycling:** This method is used to process the biodegradable waste so that we can use the material again.

(c) **Composing:** Domestic waste can be converted into compost and used as manure.

(d) **Incineration:** Burning of waste to high temperature to form ash is called incineration.

S78. Environmental problems caused by man are:

(a) Depletion of natural resources.

(b) Depletion of ozone layer by the use of chlorofluorocarbons.

(c) Increase in radioactivity in atmosphere in the pursuit of nuclear weapons

(d) Global warming due to excessive use of fossil fuels.

S79. Our life style has changed as a result of development and advancement in technology. More and more of non-biodegradable waste material in the form of plastics, metals, etc., is being produced. This is causing environmental pollution.

We are depleting the ozone layer by using chlorofluorocarbons in our appliances and in fire fighting instruments.

We can check environmental problems by converting biodegradable wastes into biogas and manure. The waste from the industries should be treated before dumping outside or releasing into water bodies.

S80. **Biodegradable substances:** Substances which can be broken down by microorganisms like bacteria and fungi are called biodegradable substances. For example, paper, vegetable and fruit peels, human excreta.

Non-biodegradable substances: Substances that cannot be broken down by microorganism into simpler and harmless substances are called non-biodegradable substances. For example, polythene bags, aluminium cans, DDT, etc.

Effects of biodegradable substances:

(i) They produce foul smell causing air pollution. If thrown in water, it will cause water pollution.

(ii) They serve as breeding ground for flies and mosquitoes which are carriers of diseases like cholera, typhoid and malaria.

Effects of non-biodegradable substances:

(i) Non biodegradable pesticides and fertilizers run off with rain water to water bodies cause water pollution and affect the soil making it acidic or alkaline.

(ii) Some of the non-biodegradable pesticides enter the food chain and affect badly humans and other organisms.

S81. (a) An undesirable change in the physical, chemical or biological characteristics of the natural environment brough about by man's activities is called environmental pollution.

(b) **Biodegradable pollutants:** These polluants can be broken down into simpler substances by the action of microorganisms. They are obtained from living organisms and cause minimum pollution.

Non-biodegradable pollutants: These pollutants cannot be broken down into simlpler substances by the action of microorganisms. They are obtained from non-living things and cause a lot of pollution.

(c) Sewage and agricultural wastes are biodegradable wastes.

S82. **Autotrophs —** These are the organisms that make their own food from carbon dioxide and water by the action of sunlight in the presence of chlorophyll. **Example:** Green plants.

Heterotrophs — These are the organisms that cannot make their own food and are dependent on others for their food requirement. **Example:** Animals.

Decomposers — These are the organisms that decompose complex molecules present in the dead remains of plants and animals. **Example:** Bacteria.

S83. (a) A self-sustaining functional unit consisting of living and non-living components is called ecosystem.

Components: Biotic components like plants and animals. Non-biotic components like soil, wind, light etc.

(b) A pond is a complete, natural and self-sustaining ecosystem whereas an aquarium is an artificial and incomplete ecosystem, therefore it needs regular cleaning for porper running.

S84. Bacteria and fungi are called decomposers because they degrade and decompose dead remains of plants and animals into simpler inorganic substance which go into the soil as nutrients.

Advantages: (i) Decomposers degrade garbage and organic wastes which would otherwise cause environment problem. It prevents foul smell and checks spread of diseases.

(ii) Decomposers recycle the nutrients through biogeochemical cycle.

S85. (a) Organisms which produce food with the help of carbon dioxide from the atmosphere and nitrogen from the soil using energy of the Sun, are called producers. This process is called photosynthesis.

Decomposers are microorganisms like bacteria or fungi which break down the dead remains of animals and plants into simpler inorganic substances.

(b) **Producers:** Green plants, Blue-green algae.

Decomposers: Bacteria, Fungi.

S86. (a) The autotrophs prepare their own food by a process known as photosynthesis.

(b) Autotrophs can make organic compounds like sugar and starch as follows:

(i) They take up carbon dioxide from the atmosphere.

(ii) They use the radiant energy of the Sun.

(c) Two sources of nitrogen:

(i) From soil. (b) From roots of certain plants.

S87. (a) Nutrition that is obtained from autotrophs (plants) is called autotrophic nutrition.

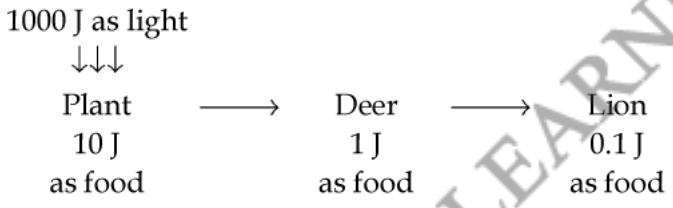
Nutrition that is obtained from organisms other than autotrophs is called heterotrophic nutrition.

(b) Cereals and vegetables are examples of autotrophic nutrition.

Animal's meat is an example of heterotrophic nutrition.

S88. Energy available at each successive trophic level of food chain is ten per cent of that at the pervious level.

This is called ten per cent law. Thus, 90 per cent energy is lost to the surrondings at each trophic level. However, plants absorb only one per cent of radiant energy of the Sun during photosynthesis. This is explained as under:



S89. Vegetarian food habits involve two-step food chains. The two chains are:

(a) Producer plants (b) Hebivorous animals

Energy flows according to ten per cent law from one trophic level to the next trophic level. So, vegetarians get much more energy than non-vegetarians. More energy in the producer plants can feed large number of people. Thus, vegetarian food habits can sustain a larger number of people.

S90. Food chain is the sequence of different organisms through which energy in the form of food is transmitted in different trophic levels.

The study of food chains helps us to understand

(a) the energy transfer through organism.

(b) ecological balance in a habitat.

(c) harmful human activities and disruption in ecological balance.

S91. (a) Proper disposal of the waste in such a manner that it does not cause any damage to the environment is called *garbage management*.

(b) Methods to manage garbage:

(i) As biodegradable and non-biodegradable wastes are to be treated differently, they should be collected differently.

(ii) Non-biodegrable waste should be sent for recycling.

(iii) Hazardous waste like surgical waste and electronic parts should not be thrown in the open ground.

(iv) Disposal should be carried out at specified centres only.

S92. Ozone layer protects the Earth from the harmful effects of ultraviolet radiations. Damage to ozone layer will result in UV rays reaching the Earth and cause skin cancer, cataract and damage to immune system.

Steps to limit the damage:

(a) Minimise the use of chlorofluorocarbon (CFCs).

(b) Freeze CFC production at 1986 level as per UNEP recommendations.

(c) Devise chemicals in place of CFCs to perform their functions.

S93. (a) Domestic wastes like vegetable peels can be disposed by composting. To carry out composting, we dig a pit and bury the domestic waste into it. It should be covered by about one foot layer of soil.

(b) Industrial waste like metallic cans can be disposed by melting and recycling into solid metal again.

(c) Plastic materials like plastic bags and buckets etc., can be recycled and reused.