

Chapter 15: Our Environment

B15

- (Activity 15.1) Collect waste material from your homes. This could include all the waste generated during a day, like kitchen waste (spoilt food, vegetable peels, used tea leaves, milk packets and empty cartons), waste paper, empty medicine bottles/strips/bubble packs, old and torn clothes and broken footwear. Bury this material in a pit in the school garden or if there is no space available, you can collect the material in an old bucket/ flower pot and cover with at least 15 cm of soil. Keep this material moist and observe at 15-day intervals.**

What are the materials that remain unchanged over long periods of time?

Materials like plastics, bubble packs, milk packets, empty cartons, etc., remain unchanged over long periods of time

What are the materials which change their form and structure over time?

Materials like vegetable peels, spoilt food, used tea leaves, waste paper change their form and structure over time.

Of these materials that are changed, which ones change the fastest?

Materials such as cotton rags, vegetable peels, used tea leaves, waste paper changed the fastest.

- Why are many man-made materials like plastics not broken down?**

Specific enzymes are needed to break-down of particular substance. Bacteria and saprophytes do not have enzymes to broken down materials like plastic etc.

- What are biodegradable substances?**

Substances that are broken down by biological processes are said to be biodegradable.
Ex: Paper, vegetable waste, cotton material, etc.

- Select the biodegradable wastes from the following.**

- DDT, crop's residue, leather, glass -**

Crop's residue and leather

- Agricultural wastes, vegetable peels, polythene bags, aluminium foil**

Agricultural waste and vegetable peels

- Gold coin, glass, nylon cloth, oil, silver foil, leather**

Oil and leather

- What are non-biodegradable substances?**

Substances that are not broken down by biological processes are said to be non-biodegradable substances. Ex: Rubber, plastic, glass etc.

- Which two of the following materials are non-biodegradable?**

- Paper, leather, nylon, egg shell, glass - Nylon and glass**

- Tea leaves, glass, glucose, cotton, silver foil - Glass and silver foil**

- List two non-biodegradable wastes generated daily in kitchen which can be recycled.**

Broken plastic containers, polythene bags, tin foils, wrappers

8. Distinguish between biodegradable and non-biodegradable substances.

Biodegradable	Non-biodegradable
1. They can be broken into simplest form by biological processes.	1. They cannot be broken by biological processes.
2. They do not produce more pollution.	2. They produce more pollution.
3. They remain for less time in environment.	3. They remain for a long time in the environment.

9. Why are some substances biodegradable and some non-biodegradable?

Some substances such as metal, glass, plastic, etc. which cannot be decomposed by the living organisms are non-biodegradable wastes. These substances are non-biodegradable because the micro-organisms do not have enzymes that can digest these substances. We classify them as non-biodegradable wastes. Other substances such as paper, vegetable wastes, etc. that can be easily broken down by enzymes are biodegradable wastes.

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

- (i) Biodegradable substances act as a medium to return back the nutrients to the environment.
- (ii) Their degradation may release certain gases in the atmosphere thereby polluting the environment.

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

- (i) They make the environment poisonous and unfit for survival.
- (ii) They block the transfer of energy and minerals in the ecosystem

12. State two advantages of paper bags over plastic bags during shopping.

- a) Paper of paper bags can be recycled. During recycling it does not produce poisonous gases like plastic bags.
- b) Paper bags are biodegradable and do not pollute the environment like non-biodegradable plastic bags.

13. Why is the government stressing upon the use of jute/cloth carrying bags?

- a) Jute/cloth bags are biodegradable and do not produce harmful gases on recycling.
- b) They do not pollute environment on disposal.

14. Write the harmful effects of using plastic bags on the environment. Suggest alternatives to plastic bags.

- a) Polythene bags when buried, soil becomes barren and leads to soil pollution.
- b) Plastic bags often block drains leading to overflow of drain causing foul smell and source of spread of diseases.
- c) On burning, they release toxic gases that cause pollution.

Alternatives to plastic bags are cloth bag, jute bags and paper bags to carry purchased items.

15. Define ecosystem.

All the interacting organisms in an area together with the non-living constituents of the environment form an ecosystem

16. Mention the two components of the ecosystem.

The two components of ecosystem are a) biotic component b) abiotic components.

17. Write the biotic components of the ecosystem.

Living organisms like plants, animals and microorganisms.

18. Write the abiotic components of the environment.

Physical factors like temperature, rainfall, wind, soil and minerals.

19. Why is garden considered as an ecosystem?

A garden has different plants, such as grasses, trees; flower bearing plants like rose, jasmine, sunflower; and animals like frogs, insects and birds. All these living organisms interact with each other and their growth, reproduction and other activities are affected by the abiotic components of ecosystem.

20. Give examples of natural ecosystems.

Forests, ponds and lakes.

21. Give examples of artificial ecosystems.

Gardens and crop-fields are human made (artificial) ecosystems.

22. How can we make an aquarium a self-sustaining ecosystem?

If we add a few aquatic plants and animals it can become a self-sustaining system.

23. How does an aquarium become a self-sustaining system by adding aquatic plants and animals?

The aquatic plants would make the food from the available light. The food can be used by fishes. A food chain is formed.

24. Can we leave the aquarium as such after we set it up? Why does it have to be cleaned once in a while?

An aquarium does not have adequate number of decomposers for wastes to decompose and so it has to be cleaned once in a while. Increase in nutrients due to decomposition causes algae growth which cause limited water of aquarium cloudy or opaque and growth of bacteria. This harms the fish population in the aquarium.

25. Do we have to clean ponds or lakes? Why or why not?

Ponds and lakes have enough varieties of decomposers which can decompose waste organic material and complete the biochemical cycles.

26. Which organisms can make organic compounds like sugar and starch from inorganic substances using the radiant energy of the Sun in the presence of chlorophyll?

All green plants and certain blue green algae which can produce food by photosynthesis.

27. What are producers?

All green plants and certain blue green algae which can produce food by photosynthesis are called the producers.

28. What are consumers?

The organisms which consume the food produced, either directly from producers or indirectly by feeding on other organisms are called consumers.

29. What happens when an organism dies?

The microorganisms, comprising bacteria and fungi, break-down the dead remains and waste products of organisms.

30. What are decomposers?

The microorganisms that break-down the complex organic substances into simple inorganic substances are called decomposers.

31. What will happen to the garbage and dead animals and plants in the absence of decomposers?

There will be no recycling of nutrients such as nitrogen, phosphorous, sulphur etc. All biodegradable wastes (garbage, dead animals and plants) will accumulate and cause environmental pollution. In the absence of decomposers, the earth would be piled up with the dead remains of plants and animals.

32. Will the natural replenishment of the soil take place, even if decomposers are not there?

Natural replenishment of soil will take place very slowly through volcanic ash and rock disintegration.

33. What is the role of decomposers in the ecosystem?

Decomposers help in the breakdown of organic matter or biomass from the body of dead plants and animals into simple inorganic raw materials such as CO_2 , H_2O , and some nutrients.

34. (Activity 15.4) Write the aquatic organisms in order of who eats whom and form a chain of at least three steps.



35. Would you consider any one group of organisms to be of primary importance? Why or why not?

Plants are necessary to produce food, animals are required to convert the food into waste materials which can then be processed by the decomposers.

36. Define food chain.

The series of organisms taking part at various biotic levels form a food chain.

37. Construct a food chain in nature in a forest.

Grass → Deer → Tiger

38. Construct a food chain in nature in a grassland.

Grass → Grasshopper → Frog → Snake → Eagle

39. Construct a food chain in nature in a pond.

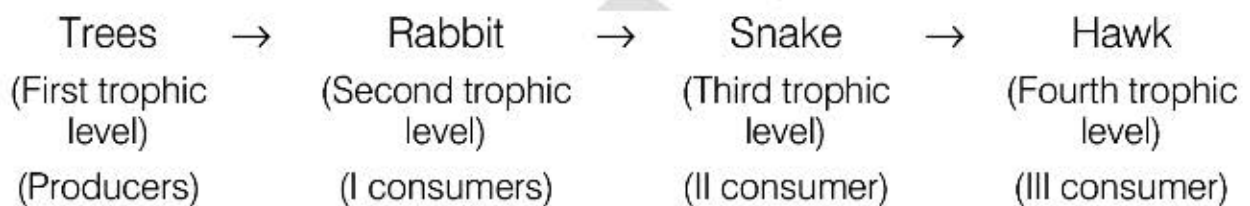
Phytoplankton → Scorpion → fish → crane

40. What are trophic levels?

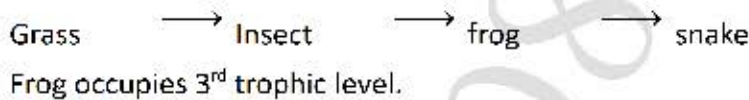
Each step or level of the food chain forms a trophic level.

41. Draw a schematic diagram of the various trophic levels.

42. State the different trophic levels in a food chain.

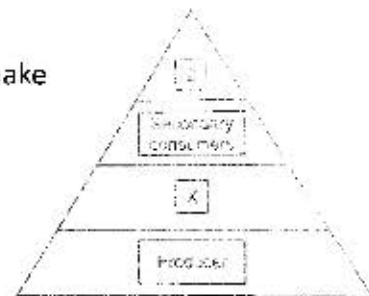


43. In a food chain consisting of snake, insect, grass and frog, assign an appropriate trophic level to frog.



44. Write the appropriate names of the trophic levels Z and X in the figure given below.

- X – Primary consumers
- Z – Tertiary consumers



45. Why is there a loss of energy when energy is transferred from one trophic level to another?

When green plants are eaten by primary consumers, some amount goes into digestion and in doing work and the rest goes towards growth and reproduction.

46. What is the average value of organic matter that is present at each trophic level?

10% is the average amount of organic matter that is present at each step and reaches the next level of consumers.

47. Why do food chains consists of only three or four steps?

Since only 10% of energy is available for the next level of consumers, food chains generally consist of only three or four steps. The loss of energy at each step is so much that very little usable energy remains after four trophic levels.

48. Is it possible that a food chain have more than six trophic levels? Support you answer with reason.

It is not possible that a food chain have more than six trophic levels. This is because of loss of 90% energy at each trophic level and only 10% energy is available. In a food chain having more than six steps, energy available at the top will not be sufficient for its survival.

49. Why is food chain having two steps most advantageous in terms of energy?

There will be maximum energy transfer from producer to the primary consumers. There will be least loss of energy trapped by plants, as heat in transfer.

50. What is 10% law?

The plants trap 1% of solar energy and only 10% of the available energy is transferred from one trophic level to the next trophic level. This is called 10% law.

51. In which trophic level there is a greater number of individuals?

In an ecosystem, producers have the greatest number of individuals.

52. In the following food chain, grass provides 4000J of energy to the grass hopper. How much energy will be available to snake and frogs?

Grass → grasshopper → frogs → snake

As per 10% law of transfer of energy through trophic level. Frogs will get 400J and snake will get 40J of energy.

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

If we kill all the organisms in one trophic level, the lower trophic level will grow more in number and the higher trophic level will not survive and flow of energy from one trophic level to other will not take place.

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

The impact of removing all the organism in a trophic level will be different for different trophic levels. The lower trophic level of an ecosystem has a greater number of individuals than the higher trophic levels. If the organisms of any trophic level are removed they cause a damage to the ecosystem. Removal of producers will affect all the organisms and they won't survive.

The removal of higher trophic level will lead to increase in organisms of lower trophic level and the organisms die due to shortage of food.

55. What is a food web?

A series of branching lines which shows the relationship in food chains is called a food web

56. Distinguish between food chain and food web.

Food chain	Food web
1. The sequence of one organism consuming the other is known as food chain.	1. A network of food chain with intercrosses and linkages is called food web.
2. Trophic level of each organism is fixed. Each organism at a trophic level receives food from one group of organisms	2. Each organism in one trophic level receives its food from more than one group of organism.

57. Why is the flow of energy unidirectional?

The energy that is captured by the autotrophs does not revert back to the solar input and the energy which passes to the herbivores does not come back to autotrophs. So the flow of energy is unidirectional.

58. Draw the schematic diagram showing the flow of energy in an ecosystem.**59. How do pesticides and other chemicals enter the food chain?**

Pesticides and other chemicals are either washed down into the soil or into the water bodies. From the soil, these are absorbed by the plants along with water and minerals, and from the water bodies these are taken up by aquatic plants and animals.

60. Why are pesticides and other chemicals accumulate in large quantities in human beings?

Pesticides and other chemicals are not degradable. They get accumulated progressively at each trophic level. As human beings occupy the top level in any food chain, maximum concentration of these chemicals get accumulated in human beings.

61. What is biological magnification?

The accumulation of chemicals in the individuals of higher trophic level is called biological magnification.

62. Will the levels of this magnification be different at different levels of the ecosystem?

No, the levels of magnification is not same in all trophic levels. The chemicals are not degraded and get accumulate progressively at each trophic level which lead to biological magnification. Biological magnification is more in organisms of higher trophic levels.

63. Give reason: Pesticides and other chemical residues are found in food grains, meat, etc.

Food grains such as wheat and rice, vegetables, fruits and meat contain varying amounts of pesticide residues because the concentration of these chemicals increases at each trophic levels.

64. Which of the following in a food chain will have maximum concentration of harmful chemical in its body?

Small fish, zooplankton, bird, phytoplankton

Birds will have maximum concentration.

65. In the following food chain, which organism will have a) maximum available energy? B) Maximum concentration of pesticides?

Phytoplanktons → zooplanktons → fish → fish eating birds

a) Phytoplanktons b) fish eating birds

66. (Activity 15.5) What do you think would be the source of pesticides in these food items?

Pesticides are used in crop fields to protect the crops from pests. These pesticides are absorbed by the soil. Plants absorb these chemicals from the soil through water and prepare food. When these green plants are eaten by humans, they get absorbed by the human body.

Could pesticides get into our bodies from this source through other food products too?

Pesticides used in crop fields pollute the ground water. If this water is used to manufacture soft drinks or mineral water, pesticides enter our body. It can also enter our body through vegetables, fruits, cereals, milk, etc.

Discuss what methods could be applied to reduce our intake of pesticides.

- All fruits and vegetables must be washed thoroughly under running water which helps to remove traces of chemicals and bacteria from the surface.
- Fruits and vegetables should be peeled if possible.
- Outer leaves of leafy vegetables can be removed.
- In case of meat, fat should be trimmed because some pesticides residues collect in fat.
- We can eat organic food or food grown using biological methods of pest management.

67. What is ozone?

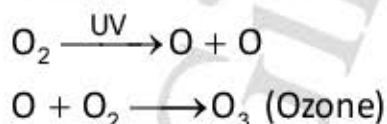
Ozone (O₃) is a molecule formed by three atoms of oxygen.

68. What is the role of ozone in the atmosphere?

Ozone at higher levels of the atmosphere shields the surface of the earth from ultraviolet (UV) radiation from the Sun. This radiation is highly damaging to organisms, for example, it is known to cause skin cancer in human beings.

69. How is ozone formed?

Ozone at the higher levels of the atmosphere is formed by UV radiation acting on oxygen (O₂) molecule. The higher energy UV radiations split apart some molecular oxygen (O₂) into free oxygen (O) atoms. These atoms then combine with the molecular oxygen to form ozone.



70. What is meant by ozone depletion?

The decrease in the amount of ozone in the atmosphere is called ozone depletion.

71. What is the reason for depletion of ozone layer?

The decrease in ozone layer is due to synthetic chemical like chlorofluorocarbons (CFC) which are used as refrigerants and in fire extinguishers.

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

The thinning of ozone layer present in stratosphere is called depletion of ozone layer. Due to depletion of ozone layer, harmful ultraviolet radiations will reach the surface of Earth which may lead to skin diseases and cancer.

To reduce the depletion of ozone layer, the use of chlorofluorocarbons has been minimised.

73. (Activity 15.6) Which chemicals are responsible for the depletion of the ozone layer?

Chlorofluorocarbons (CFC), nitrogen oxides, hydrocarbons.

74. Find out if the regulations put in place to control the emission of these chemicals have succeeded in reducing the damage to the ozone layer. Has the size of the hole in the ozone layer changed in recent years?

Main pollutant responsible for the depletion of ozone layer are CFC which are found in air conditioners and refrigerators, cleaning solvents, certain fire extinguishers. Montreal protocol in 1987 called for 50% cut in the use of CFC by 1998. In 1992, Montreal protocol agreed to phase out CFC entirely by 1996. As of now CFCs have been replaced by HFC (hydrofluorocarbons) which contain no bromine or chlorine and do not contribute to the ozone depletion.

75. (Activity 15.7) Find out what happens to the waste generated at home. Is there a system in place to collect this waste?

The waste generated at home is separated into recyclable and non-recyclable or wet and dry. This is collected by the municipal authority and taken to a garbage dump where it is dumped separately into recyclable and non-recyclable parts.

Find out how the local body (panchayat, Municipal Corporation, resident welfare association) deals with the waste. Are there mechanisms in place to treat the biodegradable and non-biodegradable wastes separately?

Local bodies dump biodegradable wastes like peels of vegetables and fruits, waste paper, worn out clothes, sewage organic waste in compost, etc. pits to prepare compost.

Biodegradable excreta of animals like cow dung are used in bio-gas plants.

Non-biodegradable wastes are mostly used to fill low land areas.

76. (Activity 15.8) Calculate how much waste is generated at home in a day.

Generally 2 – 3 kg waste is generated in a home per day.

How much of this waste is biodegradable?

Vegetable and fruit peels, leftover food, waste paper, used tea leaves, etc. amount to 1 – 2 kg per day.

Calculate how much waste is generated in the classroom in a day.

Classroom waste includes mostly paper, leftover food, wrappers, dust etc. which amounts to about 750g to 1kg per day.

How much of this waste is biodegradable?

Most of the classroom waste is biodegradable which is less than 500g.

Suggest ways of dealing with this waste.

The biodegradable wastes like paper, leftover food items, and fallen leaves should be dumped into compost pits, made in safe corner of the school, to prepare compost. The compost can be used in the school garden as manure.

- 77. (Activity 15.9) Find out how the sewage in your locality is treated. Are there mechanisms in place to ensure that local water bodies are not polluted by untreated sewage?**

Sewage is collected in drains and sent to a Sewage Treatment Plant (STP) where it is filtered and treated with microbes and chemicals to get rid of waste material. There are sewage treatment plants which treat water before it is released into the river. Industries are required to treat wastes before allowing them to enter the rivers.

- Find out how the local industries in your locality treat their wastes.**

Different industries use different methods to eliminate pollutants depending upon the nature of wastes.

Waste water is kept in tanks to remove suspended impurities.

Waste water is treated with different chemicals to remove waste and harmful chemicals.

Waste water is treated with disinfectants like chlorine before allowing it into rivers.

- Are there mechanisms in place to ensure that the soil and water are not polluted by this waste?**

Biodegradable waste is sent for preparation of compost, bio-gas and manure; non-biodegradable is used for land refill.

- 78. What are the causes for production of large amount of waste material?**

- a) Improvement in our life-style.
- b) Change in attitude.
- c) Change in packaging.

- 79. What are the problems caused by the non-biodegradable wastes that we generate?**

Non-biodegradable substances affect the environment in the following ways:

(i) Since the non-biodegradable substances cannot be broken down, they get accumulated and thus contaminate the soil and the water resources.

(ii) These substances, when accidentally eaten by some stray animal, can harm them and can even cause their death.

(iii) These substances occupy more space in the landfills and require special disposal techniques.

(iv) These materials can accumulate in the environment and can also enter the food chain.

(v) These material clog the drains and cause flooding of low laying areas.

- 80. If all the waste we generate is biodegradable, will this have no impact on the environment?**

If all the waste is biodegradable, then there will be no accumulation of waste and the Earth would be a cleaner place to live. But if this biodegradable waste is too large in amount then its degradation may lead to air pollution (due to release of gases).

81. What do you think are the advantages of disposable paper-cups over disposable plastic cups?

Paper is bio-degradable while plastic is not. Plastic may have certain materials with mingles with hot tea/coffee and cause harm to the body.

82. (Activity 15.10) Search the internet or library to find out what hazardous materials have to be dealt with while disposing of electronic items. How would these materials affect the environment?

Disposed electronic items contain cadmium, lead, silicon, plastics, etc. These items cause land pollution which can affect our health and also other organisms.

Find out how plastics are recycled.

Plastics can be melted and recycled for making plastic bags, mugs, bucket, etc. Molten plastic waste mixed with asphalt can be used for making road.

Does the recycling process have any impact on the environment?

During recycling of plastic fumes of plastic and other chemicals cause air pollution which may cause breathing problems like asthma.

Fill in the blanks:

- 1) Substances that are broken down by biological processes are called biodegradable.
- 2) Substances that are not broken down by biological processes are said to be non-biodegradable substances.
- 3) Cotton rags is an example of biodegradable substance.
- 4) Milk packet is an example of non-biodegradable substance.
- 5) Interaction between biotic and abiotic components is called ecosystem.
- 6) Garden is an example of artificial ecosystem.
- 7) Green plants and blue-green algae are called producers.
- 8) All green plants and certain blue green algae which can produce food by photosynthesis are called the producers.
- 9) The organisms which consume the food produced, either directly from producers or indirectly by feeding on other organisms are called consumers.
- 10) The microorganisms that break-down the complex organic substances into simple inorganic substances are called decomposers.
- 11) The series of organisms taking part at various biotic levels is called food chain.
- 12) Each step or level of the food chain is called trophic level.
- 13) The green plants in a terrestrial ecosystem capture about 1% of the energy of sunlight that falls on their leaves.
- 14) The average value for the amount of organic matter that is present at each step is 10%.
- 15) Greatest number of individuals in an ecosystem is producers.
- 16) Interconnected food chains are called food web.

- 17) The flow of energy is unidirectional.
- 18) The accumulation of chemicals in the individuals of higher trophic level is called biological magnification.
- 19) Ozone is a molecule formed by three molecules of oxygen.
- 20) Ozone shield the earth from ultraviolet radiations.
- 21) UNEP stands for United Nations Environment Programme.

Multiple choice Questions:

- 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
- 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
- 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
- Which one of the following is an artificial ecosystem?

(a) Pond	(b) Crop field	(c) Lake	(d) Forest
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- In a food chain, the third trophic level is always occupied by

(a) carnivores	(b) herbivores	(c) decomposers	(d) producers
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- An ecosystem includes

(a) all living organisms	(b) non-living objects
(c) both living organisms and non-living objects	
(d) sometimes living organisms and sometimes non-living objects	
- In the given food chain, suppose the amount of energy at fourth trophic level is 5 kJ, what will be the energy available at the producer level?
 Grass → Grasshopper → Frog → Snake → Hawk

(a) 5 kJ	(b) 50 kJ	(c) 500 kJ	(d) 5000 kJ
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- Accumulation of non-biodegradable pesticides in the food chain in increasing amount at each higher trophic level is known as

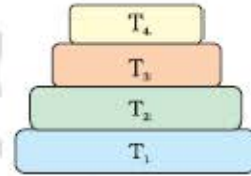
(a) eutrophication	(b) pollution
(c) biomagnification	(d) accumulation
- Depletion of ozone is mainly due to

(a) chlorofluorocarbon compounds	(b) carbon monoxide
(c) methane	(d) pesticides

10. **Organisms which synthesise carbohydrates from inorganic compounds using radiant energy are called**
(a) decomposers (b) **producers** (c) herbivores (d) carnivores
11. **In an ecosystem, the 10% of 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
12. **Organisms of a higher trophic level which feed on several types of organisms belonging to a lower trophic level constitute the**
(a) food web (b) **ecological pyramid**
(c) ecosystem (d) food chain
13. **Flow of energy in an ecosystem is always**
(a) **unidirectional** (b) bidirectional (c) multi directional (d) no specific direction
14. **Excessive exposure of humans to U V-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)
15. **In the following groups of materials, which group (s) contains only non-biodegradable items?**
(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)**
16. **Which of the following limits the number of trophic levels in a food chain?**
(a) **Decrease in energy at higher trophic levels**
(b) Deficient food supply
(c) Polluted air
(d) Water
17. **Which of the statement is incorrect?**
(a) All green plants and blue green algae are producers
(b) **Green plants get their food from organic compounds**
(c) Producers prepare their own food from inorganic compounds
(d) Plants convert solar energy into chemical energy
18. **Which 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)
19. **The percentage of solar radiation absorbed by all the green plants for the process of photosynthesis is about**
(a) **1 %** (b) 5 % (c) 8 % (d) 10 %

20. In the given Figure, the various trophic levels are shown in a pyramid.
At which trophic level is maximum energy available?

- (a) T4
- (b) T2
- (c) T1
- (d) T3



21. What will happen if deer is missing in the food chain given below?
Grass → Deer → Tiger
- (a) The population of tiger increases
 - (b) The population of grass decreases
 - (c) Tiger will start eating grass
 - (d) The population of tiger decreases and the population of grass increases
22. The decomposers in an ecosystem
- (a) convert inorganic material, to simpler forms
 - (b) convert organic material to inorganic forms
 - (c) convert inorganic materials into organic compounds
 - (d) do not breakdown organic compounds
23. If a grass hopper 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 primary consumer
24. Disposable plastic plates should not be used because
- (a) they are made of materials with light weight
 - (b) they are made of toxic materials
 - (c) they are made of biodegradable materials
 - (d) they are made of non-biodegradable materials
