

LIFE ON EARTH-II

2 CLASSIFICATION OF LIVING BEINGS

I. Multiple choice questions: Tick (✓) the correct choice.

1. Lowest category of classification is
(a) Genus (b) Species (c) Kingdom (d) None

Ans. (b)

2. Animals without vertebral column are called
(a) Vertebrates (b) Mammals (c) Invertebrates (d) Fungi

Ans. (c)

3. Earthworm belongs to
(a) Porifera (b) Arthropoda (c) Annelida (d) Mollusca

Ans. (c)

4. Pore-bearing animals belong to
(a) Protozoa (b) Porifera (c) Coelenterata (d) Annelida

Ans. (b)

5. Tentacles are present in
(a) *Hydra* (b) *Paramecium* (c) Snail (d) Tapeworm

Ans. (a)

6. Respiration through gills occurs in
(a) Pisces (b) Amphibia (c) Mammals (d) Reptiles

Ans. (a)

7. Animals which can live both in water and on land belong to
(a) Mollusca (b) Amphibia (c) Aves (d) Mammals

Ans. (b)

8. Which of the following is a heterotrophic organism?
(a) Mushroom (b) *Spirogyra* (c) Fern (d) Sunflower

Ans. (a)

9. An example of a non-flowering plant is
(a) fern (b) pinus (c) mango (d) lotus

Ans. (a)

10. Aquatic non-flowering plants are
(a) Algae (b) Fungi (c) Bryophytes (d) Pteridophytes

Ans. (a)

11. Seed-bearing plants lacking fruits belong to
(a) Dicotyledons (b) Monocotyledons
(c) Angiosperms (d) Gymnosperms

Ans. (d)

12. Which of the following is a perennial plant?
(a) Mango tree (b) China-rose (c) Pea plant (d) Rose

Ans. (a)

13. Maize is a/an
(a) Gymnosperm (b) Angiosperm (c) Fern (d) Bryophytes

Ans. (b)

14. Bryophytes are found in
(a) Moist, shady places (b) Any open space
(c) Rocky areas (d) Water

Ans. (a)

15. Non-flowering plants are called
(a) cryptogams (b) phanerogams (c) algae (d) bacteria

Ans. (a)

16. Cocci bacteria are
(a) rod-shaped (b) spherical (c) spiral (d) triangular

Ans. (b)

17. A group of thallophytes consisting of plants with chlorophyll are
(a) bacteria (b) algae (c) fungi (d) angiosperms

Ans. (b)

18. All fungi are
(a) autotrophic (b) parasitic
(c) saprophytic (d) parasitic or saprophytic

Ans. (d)

19. Well-developed roots, stems and leaves are present in
(a) thallophytes and bryophytes
(b) bryophytes and pteridophytes
(c) pteridophytes and gymnosperms
(d) cryptogams and phanerogams

Ans. (c)

- 20.** Biennials complete their life cycle in
(a) two years (b) one year (c) three years (d) ten years
Ans. (a)
- 21.** Seeds are naked in
(a) pteriodophytes (b) gymnosperms
(c) angiosperms (d) cryptogams
Ans. (b)
- 22.** Animals with backbones are called
(a) Mammals (b) Annelids (c) Vertebrates (d) Invertebrates
Ans. (c)
- 23.** Single-celled microscopic animals are invertebrates grouped under
(a) Porifera (b) Protozoa (c) Mollusca (d) Platyhelminthes
Ans. (b)
- 24.** The arm-like structures present around the opening of coelenterates are called
(a) pseudopodia (b) tentacles (c) spines (d) bristles
Ans. (b)
- 25.** Annelids have a
(a) soft, unsegmented, bilaterally symmetrical body.
(b) soft, cylindrical, segmented, bilaterally symmetrical body.
(c) soft, segmented, bilaterally symmetrical body.
(d) soft, segmented, laterally symmetrical body.
Ans. (c)
- 26.** Organs of excretion in annelids are
(a) kidney (b) nephridia (c) suckers (d) lungs
Ans. (b)
- 27.** Arthropods have a
(a) segmented body with jointed legs.
(b) soft body with segments.
(c) jointed legs and exoskeleton.
(d) soft body with a shell over the body.
Ans. (a)

- 28.** The body temperature of warm-blooded animals
- (a) keeps fluctuating.
 - (b) changes according to the temperature of the environment.
 - (c) does not change with the change in the temperature of the environment.
 - (d) none of the above

Ans. (c)

- 29.** Milk in the body of mammals is produced by
- (a) sweat glands
 - (b) salivary glands
 - (c) mammary glands
 - (d) none of the above

Ans. (c)

- 30.** Bones with large air spaces are present in
- (a) mammals
 - (b) fish
 - (c) annelids
 - (d) birds

Ans. (d)

- 31.** The first name in a scientific name of an organism is its
- (a) genus
 - (b) species
 - (c) common name
 - (d) family

Ans. (a)

- 32.** Organisms that derive their food from dead or decaying organisms are called
- (a) parasites
 - (b) saprophytes
 - (c) autotrophs
 - (d) pteridophytes

Ans. (b)

- 33.** The root-like structures in Bryophytes are called
- (a) rhizoids
 - (b) rhizomes
 - (c) sori
 - (d) mosses

Ans. (a)

- 34.** The leaves of pteridophytes are called
- (a) fronds
 - (b) cones
 - (c) thalamus
 - (d) rhizome

Ans. (a)

- 35.** All animals with backbone are called
- (a) invertebrates
 - (b) vertebrates
 - (c) reptiles
 - (d) aves

Ans. (b)

II. Which of the following statements are true (T) and which ones are false (F)? Mark T or F.

1. Mushroom is a fungus.
2. Fern is a flowering plant.
3. Snail is an invertebrate animal.
4. Bat is a vertebrate animal.
5. Invertebrates have soft bodies.
6. Dicotyledonous plants have seeds with one cotyledon.
7. Algae are simple plants that depend on other plants or animals for food.
8. Fungi is a group of plants which do not have chlorophyll.
9. Mosses grow in dry areas.
10. Conifers are flowering plants with seeds present inside their fruits.
11. Plants that make seeds in cones are called ferns.
12. Dicotyledonous plants have seeds with two cotyledons.
13. Medium-sized plants are called herbs.
14. Perennial plants continue to grow and produce seeds every year.
15. Plants that live for many years are annuals.
16. Most coniferous plants have needle-shaped leaves that stay green all the year round.
17. Animals that have a backbone are called invertebrates.
18. Fish have fins, scales and they breathe through gills.
19. Reptiles have a scaly skin. They lay eggs with a hard shell and are warm-blooded animals.
20. Mammals are warm-blooded animals, they feed their young ones with milk produced by salivary glands and breathe through gills.
21. Protozoans are multicellular organisms.
22. Arthropods have a soft, outer covering called endoskeleton.
23. A tapeworm is a flatworm that lives in the human intestine.

24. Fish use lungs for breathing.
25. The skeleton of a bird is very light and bones are filled with air spaces.
26. Insects belong to the amphibian group of animals.
27. Bacteria are multicellular, microscopic organisms.
28. Fungi grow best where cold and dry air is available.
29. The leaves of the bryophytes are well developed.
30. Bacteria are grouped under fungi.
31. Dicotyledonous plants have seeds with one cotyledons.
32. Amphibians are cold-blooded animals.
33. Birds are warm-blooded animals.
34. Fishes breathe by gills.
35. Reptiles are gill breathers.
36. *Amoeba* is a multicellular animal.

Ans. 1. True 2. False 3. True 4. True 5. True 6. False 7. False
8. True 9. False 10. False 11. False 12. True 13. False
14. True 15. False 16. True 17. False 18. True 19. False
20. False 21. False 22. False 23. True 24. False 25. True
26. False 27. False 28. False 29. False 30. False 31. False
32. True 33. True 34. True 35. False 36. False

III. Fill in the blanks.

1. is a unicellular plant.
2. is a unicellular animal.
3. Binomial system of naming living organisms was given by
4. A cold-blooded animal is
5. A warm-blooded animal is
6. Invertebrates with jointed legs belong to group
7. Vertebrates which can live both on land and in water are called
8. Two spiny-skinned animals are and
9. The non-flowering plants which are green and live in water are called

10. are non-flowering plants which are non-green.
11. The plant which bear flowers are called
12. Seeds that have only one cotyledon are called
13. Fungi is a group of plants which do not contain
14. Mosses have root-like by which they remain attached to the soil.
15. Monocotyledon plants have cotyledon in their seeds.
16. Simple animals that were thought to be plants because they do not move from place to place are belonging to the group
17. The group of invertebrates with a bag-like body and tentacles around the opening are called
18. The invertebrates with sharp spines sticking out through their skin belong to group
19. The animals without a backbone whose body is soft and often covered by a hard shell are
20. The animals without a backbone that have jointed legs are
21. The body of a fish is covered with
22. The group of animals with a backbone which spend a part of their life on land but reproduce in water is called
23. The backbone of higher animals is made up of a number of small bones called
24. The body temperature of birds remains almost the same as that of the environment. This means that birds are animals.
25. Animals that is warm-blooded, has hair, and feeds milk to its young ones, is a
26. Sponges have small all over the body.
27. Animals can be divided into two groups called and on the basis of presence or absence of backbone.

28. is the largest group of invertebrates.
29. The body of arthropods is differentiated into ,
..... and
30. Organisms with jointed legs and exoskeleton belong to the
group

Ans. 1. Chlamydomonas 2. Amoeba 3. C. Linnaeus 4. Frog 5. Mouse
6. Arthropoda 7. Amphibians 8. Sea-urchin, Starfish 9. Algae
10. Fungi 11. Phanerogames 12. Monocotyledonous
13. Chlorophyll 14. Rhizoids 15. Single 16. Sponges, Porifera
17. Coelenterata 18. Echinodermata 19. Molluscs 20. Arthropods
21. Scales 22. Amphibians 23. Vertebras 24. Warm-blooded
25. Mammals 26. Openings 27. Invertebrates, Vertebrates
28. Arthropoda 29. Head, Thorax, Abdomen 30. Arthropoda

IV. Find the odd-one out.

1. Amoeba, Euglena, Paramecium, Chlamydomonas.
2. Bacteria, Chlamydomonas, Spirogyra, Volvox.
3. Yeast, Mushroom, Bread mould, Chlamydomonas.
4. Cycas, Mango, Neem, Sunflower.
5. Tapeworm, Roundworm, Liver fluke, Earthworm.
6. Starfish, Brittle star, Sea urchin, Crab.
7. Monkey, Cow, Humans, Crocodile.
8. Yeast, Mushroom, Fern, Bread mould.
9. Mango, Yeast, Bread Mould, Mushroom.
10. Sunflower, Tulsi, Rose, Spirogyra.
11. Hydrophytes, Thallophytes, Bryophytes, Pteridophytes.
12. Pine, Chlamydomonas, Spirogyra, Volvox.
13. Peepal, Eucalyptus, Banana, Mango
14. Sunflower, Tulsi, Rose, Spinach
15. Moss, Mushroom, Bread Mould, Yeast
16. China rose, Marigold, Petunia, Chlamydomonas

17. Human being, Whale, Penguin, Elephant,
18. Bat, Robin, Owl, Peacock
19. Snake, Alligator, Eel, Turtle
20. Frog, Shark, Seahorse, Carp
21. Flatworm, Earthworm, Roundworm
22. Sea urchin, Starfish, Brittle star, Jellyfish
23. *Amoeba*, *Euglena*, *Hydra*, *Paramecium*
24. Ant, Cockroach, Spider, Sponge
25. Snail, Oyster, Earthworm, Octopus
26. Jellyfish, *Hydra*, Sea anemone, Butterfly

Ans. 1. *Chlamydomonas* 2. Bacteria 3. *Chlamydomonas* 4. Sunflower
5. Earthworm 6. Crab 7. Crocodile 8. Fern 9. Mango
10. Sirogyra 11. Hydrophytes 12. Pine 13. Banana 14. Spinach
15. Moss 16. *Chlamydomonas* 17. Penguin 18. Bat 19. Eel
20. Frog 21. Earthworm 22. Jellyfish 23. *Hydra* 24. Sponge
25. Earthworm 26. Butterfly.

V. Give the differences between:

1. Invertebrate and Vertebrate animals

Ans.	Vertebrates	Invertebrates
	(1) Vertebral column is present which is made up of small pieces of bones called vertebrae.	(1) Vertebral column is absent.
	(2) Both exoskeleton and endoskeleton are present.	(2) Only exoskeleton is present.
	(3) Usually have two pairs of appendages – forelimbs & hindlimbs.	(3) More than two pairs of appendages are present. e.g. cockroach, butterfly.
	(4) Vertebrates are less in number.	(4) Invertebrates are more in number.

2. Warm-blooded and Cold-blooded animals

Ans.	Warm-blooded animals	Cold-blooded animals
	(1) The animals which can maintain a constant body temperature are called warm-blooded animals. (2) The body temperature of the animals are independent of the surrounding environment, e.g. mammals.	(1) The animals which cannot maintain a constant body temperature are called cold-blooded animals. (2) The body temperature of the animals matches that of surrounding environment, e.g. amphibians.

3. Flowering and Non-flowering plants

Ans.	Flowering Plant	Non-flowering plant
	(1) Flowering plants bear flowers and fruits. (2) Flowering plants are also called phanerogames. (3) Phanerogames are divided into Gymnosperms (naked seeds) and Angiosperms (enclosed seed) e.g. Cycas, Peaplant.	(1) Non-flowering plants do not bear flower and fruits. (2) Non-flowering plants are also called cryptogames. (3) Cryptogames are divided into three groups—Thallophyta, Bryophyta and Pteridophyta. e.g. Bacteria, Algal, Fungi.

4. Algae and Fungi

Ans.	Algae	Fungi
	(1) Algae are green non-flowering plants. (2) Algae are autotrophic plants. (3) Algae are aquatic plants.	(1) Fungi are non-green, non-flowering plants. (2) Fungi are heterotrophic plants (saprophytic) (3) Fungi are found in warmth and moist places.

5. Annuals and Biennials

Ans.	Annuals	Biennials
	(1) Annuals are the plants which complete their life cycle in one year, during which they germinate, flower, produce seeds and die, e.g. most of the herbs (sunflowers)	(1) Biennials are the plants which complete their life cycle in two years, during which they germinate, flower, produce seeds and die, e.g. carrot, turnip.

6. Herbs and Shrubs

Ans.	Herbs	Shrubs
	(1) Herbs are small plants with soft stem.	(1) Shrubs are medium-sized plants with hard and woody stems.
	(2) The height of these plants are three-to-four feet, e.g. mint, spinach.	(2) The height of these plants are more than herbs, e.g. Rose, Tulsi

7. Parasites and Saprophytes

Ans.	Parasites	Saprophytes
	(1) The plants that obtain their food from other living organisms (without killing them) are called parasites, e.g. <i>Cuscutta</i> , <i>Viscum</i> , <i>Orobancha</i> etc.	(1) The plants that absorb soluble organic matter from dead animal and plant matter are called saprophytes, e.g. mushroom, yeast.

8. Shrubs and Trees

Ans.	Shrubs	Trees
	(1) Shrubs are medium-sized plants with hard and woody stem.	(1) Trees are tall plants with hard and woody stem.
	(2) Shrubs are less than 10 m of height, e.g. Rose, lemon.	(2) Trees may grow more than 10 m height, e.g. Mango, neem etc.

9. Monocotyledonous plants and Dicotyledonous plants

Ans.	Monocotyledonous plants	Dictoyledonous plants
	(1) The angiospermic plants in which seeds contain only one seed leaf (cotyledon) are called monocotyledonous plants, e.g. maize, rice, wheat.	(1) The angiospermic plants in which seeds contain two seed leaves (cotyledonos) are called dicotyledones plant, e.g. pea, gram.

10. Birds and Mammals

Ans.	Birds	Mammals
	(1) The body of a bird is covered by feathers. (2) They are egg-laying animals. (3) They have hallow bones with air cavities which helps them in flying. (4) Their forelimbs are modified into wings and hindlimbs are adopted for walking, e.g. Owl, Pigeon (5) They have no mammary glands.	(1) The body of mammals is covered by hair. (2) They give birth to young one. (3) They have solid bones without air space. (4) Their forlimbs are used for different activities and hindlimbs for walking and running, e.g., Gorilla, Rabbit. (5) They have mammary glands.

11. Unicellular and Multicellular

Ans.	Unicellular	Multi-cellular
	(1) These organisms are made up of single cell. (2) All the life processes like excretion, reproduction, growth occurs in a single cell. (3) Eg. <i>Amoeba</i> , <i>Chlamydomonas</i> , <i>Euglena</i> .	(1) These organisms are made up of a number of cells. (2) Multicellular organisms have different organs for different life processes. (3) Eg. ant, housefly, butterfly.

12. Carnivorous and Herbivorous.

Ans.	Herbivore	Carnivore
	(1) Herbivores are the plant-eating animals. e.g. Cow, Rabbit	(1) Carnivores are the meat-eating animals, eg. Lion,
	(2) Herbivores are the primary consumers.	(2) Carnivores are the secondary consumers.

VI. Give one example of a plant of each type:

- (a) Gymnosperms (b) Herb (c) Shrub (d) Monocot
(e) Annuals (f) Algae (g) Fungi (h) Pteriolophytes (i) Bryophytes

Ans. (a) Cycas (b) Spinach (c) Rose (d) Wheat (e) Maize
(f) *Chlamydomonas* (g) Mushroom (h) Fern (i) *Funaria*

VII. Rearrange the letters in brackets to fill in the blanks.

- (LAGEA) are the simplest green plants that contain chlorophyll and usually live in water.
- (GUIFN) are simple plants that do not have chlorophyll.
- (OSSMES) are simple, tiny green plants that do not have true roots, stem and leaves.
- In (MYNPGOEMSSR) the seeds are not enclosed in a fruit.
- The (MEST) of ferns grows under the ground.

Ans. 1. Algae 2. Fungi 3. Mosses 4. Gymnosperms 5. Stem

VIII. Encircle the plant group for which each statement is true.

More than one answer is possible in each case.

- These are green plants. FERNS, MOSSES, FUNGI
- These plants have no true roots, stem and leaves. FERNS, MOSSES, FUNGI
- These plants do not bear seeds. FERNS, MOSSES, CONIFERS
- These plants do not bear flowers. FERNS, MOSSES, CONIFERS

Ans. 1. Ferns, Mosses 2. Fungi 3. Ferns, Mosses 4. Ferns, Mosses

IX. Give two examples of each of the following:

- (a) Reptiles (b) Nematelminthes (c) Echinodermata
(d) Arthropods (e) Porifera (f) Terrestrial animals

Ans. (a) Snake, Tortoise (b) Roundworm, Hookworm (c) Sea-urchin, Starfish (d) Spider, Ant (e) *Sycon*, *Spongilla* (f) Cow, Gorilla

X. State two characteristic features of each of the following:

- (a) Mammals (b) Insects (c) Coelenterata
(d) Pisces (e) Amphibians

Ans. (a) Mammals:

(1) Mammals are warm-blooded vertebrates that have hair on their bodies.

(2) They have mammary glands to nourish their new borns.

(b) Insects:

(1) Insects have adopted successfully to live on land, in fresh water, and in the air.

(2) Their bodies are divided into head, thorax and abdomen.

(c) Celenterata:

(1) They have two-layered body wall enclosing a body cavity.

(2) Mouth is surrounded by a number of finger-like structures called tentacles.

(d) Pisces:

(1) They are cold-blooded animals.

(2) Respiration is through gills.

(e) Amphibians:

(1) In larval stage, amphibians live in water and breathe through gills. In adult stage they live on land as well as in water and respire through lungs and skin respectively.

(2) They lay eggs in water.

XI. Classify the given plants into different categories as indicated.

1. *Eucalyptus*, mint, rose, spinach, neem, radish, tulsi, banana and china rose into herbs, shrubs and trees.

Ans. Herb: Mint, spinach, banana, radish.

Shrub: Rose, tulsi, china rose

Tree: Eucalyptus, neem

XII. Put the following vertebrates into their respective groups:

Toad, horse, lion, bat, sparrow, frog, whale, crocodile, turtle, shark, lizard, sea horse

- (a) Pisces (b) Amphibia (c) Reptiles
(d) Aves (e) Mammals

Ans. (a) Pisces: Sea horse, Shark.

(b) Amphibia: Toad, Frog.

(c) Reptiles: Crocodile, Turtle, Lizard.

(d) Aves: Sparrow.

(e) Mammals: Horse, Lion, Bat, Whale.

XIII. Match the group of animals with the characteristic feature/features of each.

<i>Group</i>	<i>Characteristics</i>
1. Molluscs	(a) feed milk to young ones, warm-blooded
2. Sponges	(b) bag-like body with tentacles around the opening
3. Worms	(c) fins, gills and cold-blooded
4. Birds	(d) body with large opening and many small pores all over
5. Mammals	(e) hard shell, soft body
6. Reptiles	(f) no teeth, light bones, warm-blooded
7. Fish	(g) soft, flat body
8. Coelenterates	(h) jointed legs, exoskeleton
9. Arthropods	(i) cold-blooded, dry scaly skin

Ans. 1. (e) 2. (d) 3. (g) 4. (f) 5. (a) 6. (i) 7. (c) 8. (b) 9. (h)

XIV. Answer the following questions:

1. Why do we need to classify living things?

Ans. In this world, no two individuals are alike. So, it is very difficult

to study them individually. So, to make the study of living organisms easier, scientists divided living organisms into groups or categories. In this way, each group provides us information about the similarities and differences of animals. This process of grouping living things on their characters is called classification.

2. Why are scientific names of living things considered better than their common names?

Ans. The same organism will have a wide variety of names within different regions of the same country and in different countries. When some biologists of different countries discuss a particular organism then they must be sure that which organism is being referred to.

To avoid this problem, C. Linnaeus introduced binomial system of nomenclature. In this system, the first term indicates the *genus* and second term indicates the *species* of the organism, e.g. *Zea mays* (maize), *Homo sapiens* (man).

3. Write the scientific names of five commonly available plants and animals.

Ans. Mango — *Mangifera indica*
Rose — *Rosa indica*
Banana — *Musa sapientum*
Tiger — *Panthera tigris*
Peacock — *Pavo cristatus*.

4. Give two examples of parasitic animals.

Ans. Tapeworm : *Taenia salium*
Roundworm : *Ascaris lumbricoides*

5. Name two herbivores and two carnivores.

Ans. Cow, Rabbit, (Herbivore)
Lion, Tiger (Carnivore)

6. Classify the following plants into annuals, biennials and perennials: neem, pea, radish, paddy, rose, guava, balsam.

Ans. Annuals : Paddy,
Biennials : Radish
Perennials : Neem, Balsam, Guava, Rose.

7. Classify the following plants into their respective groups: Fern, cycas, neem, yeast, mushroom, moss, *Spirogyra*.

Ans. Bryophyte : Moss
Pteridophyte : Fern
Gymnosperms : Cycas
Angiosperm : Neem
Fungi : Yeast, Mushroom
Algae : *Spirogyra*

8. What are Thallophytes? Give examples.

Ans. Thallophytes are the non-flowering plants in which the plant body is not differentiated into root, stem and leaves. This undifferentiated plant body is called thallus.

For example: Algae, Fungi and Bacteria are the non-flowering plants with undifferentiated root, stem and leaves.

9. Give one characteristic which makes fungi different from other non-flowering plants.

Ans. Some fungi can derive their food from dead and decaying organic matter. So these organisms are called saprotrophs. This characteristic makes fungi different from other non-flowering plants.

10. What are cones?

Ans. Cones are the reproductive structure in gymnosperms. The flowers are generally unisexual and without sepals, and petals. Cones are of two types:

(i) Male cone (ii) Female cone

11. Give two characteristics shared by all angiosperms.

Ans. Two characteristics of angiosperms

(1) All the plants bear flowers.

(2) Seeds of all these plants are enclosed inside fruits.

12. How are the seeds of monocotyledonous plants different from those of dicotyledonous plants?

Ans. Angiosperms can be divided into two groups depending on the number of seed leaves of the seeds:

(i) **Dicotyledonous plants:** In these plants, seeds contain two seed leaves, eg. pea, bean, gram.

(ii) **Monocotyledonous plants:** In these plants, seeds contain only one seed leaf, eg. maize, rice.

13. How are the stems of herbs, shrubs and trees different? Give examples.

Ans. Herbs. They have very soft stems, eg. spinach.

Shrubs. They are medium-sized plants with woody stems, eg. Rose, tulsi.

Trees. They are tall plants with thick and woody stems, eg. Neem, *Eucalyptus*.

14. What is meant by a plant having naked seeds?

Ans. Gymnosperm is a group of flowering and seed-bearing plants in which seeds are not enclosed inside the fruit, i.e. seeds are naked, eg. cycas.

15. How are plants classified according to their habitat? Give one example of each.

Ans. On the basis of habitat, plants may be of following types—

(i) **Hydrophytes.** The plants which are adapted to grow in water are called hydrophytic plants, e.g. Lotus.

(ii) **Mesophytes.** The plants which are adapted to grow in well-balanced moisture supply are called mesophytic plants, e.g. Neem, Mango.

(iii) **Xerophytes.** The plants which are adapted to grow under dry conditions are called xerophytic plants, e.g. Cacti.

16. What are the advantages of classification?

Ans. Advantage of classification.

(1) It makes the study of different organisms very convenient.

(2) It shows relationship among various groups of organisms.

(3) It facilitates identification of organisms.

17. What are vertebrates? Give two examples.

Ans. Vertebrates are those animals that have backbone. This backbone is made up of a number of small bones called vertebrae, e.g. Fish, Man.

18. State two characteristics of Aves.

Ans. Two characteristics of Aves:

(1) These are warm-blooded animals.

(2) The skeletons of these animals are very light due to presence of air spaces in bones.

19. Name the structure found in the following for movement:

(i) Fish (ii) Birds (iii) Frogs (iv) Insects.

Ans. Fish swim by fins

Birds fly by wings.

Frogs move by hindlimbs.

Insects move by legs and wings.

20. Why are scientific names of living things considered better than their common names?

Ans. Advantage of using scientific names:

(i) The scientific name of an organism is universal.

(ii) Scientific name eliminates the likely confusion of multiple naming of an organism in different regions.

(iii) Scientific name indicates certain important characteristics of the organism.

21. Name the two groups into which animal kingdom is divided.

Ans. Animal kingdom is divided into two big groups:

(i) **Invertebrates** : Without backbone.

(ii) **Vertebrates** : With backbone

22. When the water temperature goes up or down what happens to the temperature of the blood of fish?

Ans. Fishes are the cold-blooded animals. Their body temperature is same as the temperature of water. If the water is warm, the fishes' blood gets warm. If the water is cold, the fishes' blood gets cold.

23. What is the most notable characteristic of birds which is not found in any other group of animals?

Ans. The skeletons of birds are light in weight. It is due to the presence of air cavities in the bones. This characteristic helps them in flight.

24. How do fish exchange gases?

Ans. Fish obtain oxygen dissolved in the water by muscle-powered movements such as forward motion of fish or the pumping actions of its mouth and throat force a flow of water over its

gills. Gills are made up of thread like structures called filament. Each filament contains a number of capillaries that gives a large surface area for the exchange of oxygen and carbon dioxide. Oxygen-rich water pulls through mouth and pumped it over their gill filament.

25. List four characteristics of reptiles.

Ans. Four characteristics of reptiles:

- (i) They are cold-blooded vertebrates.
- (ii) They have dry and scaly skin.
- (iii) They lay eggs with leathery shells.
- (iv) Respirations through lungs.

26. List three characteristics of amphibians.

Ans. Three characteristics of amphibians.

- (i) These animals live both on land and in water.
- (ii) They need water for successful reproduction because reproduction is external.
- (iii) Respiration through gills in larval stage and mostly through lungs and skin in adult stage.

27. You are asked to classify an animal in the correct group. The animal has a soft body and arm-like tentacles that have sucking discs. You dissect the animal and find that it has an internal shell. Is the animal a coelenterate or a mollusc? Explain your answer.

Ans. This animal is a coelenterate. Because coelenterates have two-layered body wall enclosing a cavity. This cavity opens by a mouth at one end only and mouth is surrounded by tentacles to catch food.

28. Why do adult amphibians tend to live near water?

Ans. Amphibians need water for successful reproduction because reproduction is external. So, amphibians tend to live near water.

29. What is a species?

Ans. A species is a specific group of closely-related individuals which are all capable of interbreeding to produce fertile offsprings. Species is the lowest category in the hierarchy.
