

Chapter 5

THE FUNDAMENTAL UNIT OF LIFE

Multiple Choice Questions

1. Which of the following can be made into crystal?
 - (a) A Bacterium
 - (b) An Amoeba
 - (c) A Virus
 - (d) A Sperm

2. A cell will swell up if
 - (a) The concentration of water molecules in the cell is higher than the concentration of water molecules in surrounding medium
 - (b) The concentration of water molecules in surrounding medium is higher than water molecules concentration in the cell
 - (c) The concentration of water molecules is same in the cell and in the surrounding medium
 - (d) Concentration of water molecules does not matter

3. Chromosomes are made up of
 - (a) DNA
 - (b) protein
 - (c) DNA and protein
 - (d) RNA

4. Which of these options are not a function of Ribosomes?
 - (i) It helps in manufacture of protein molecules
 - (ii) It helps in manufacture of enzymes
 - (iii) It helps in manufacture of hormones
 - (iv) It helps in manufacture of starch molecules
 - (a) (i) and (ii)
 - (b) (ii) and (iii)
 - (c) (iii) and (iv)
 - (d) (iv) and (i)

- 5.** Which of these is not related to endoplasmic reticulum?
- (a) It behaves as transport channel for proteins between nucleus and cytoplasm
 - (b) It transports materials between various regions in cytoplasm
 - (c) It can be the site of energy generation
 - (d) It can be the site for some biochemical activities of the cell
- 6.** Following are a few definitions of osmosis
Read carefully and select the correct definition
- (a) Movement of water molecules from a region of higher concentration to a region of lower concentration through a semipermeable membrane
 - (b) Movement of solvent molecules from its higher concentration to lower concentration
 - (c) Movement of solvent molecules from higher concentration to lower concentration of solution through a permeable membrane
 - (d) Movement of solute molecules from lower concentration to higher concentration of solution through a semipermeable membrane
- 7.** Plasmolysis in a plant cell is defined as
- (a) break down (lysis) of plasma membrane in hypotonic medium
 - (b) shrinkage of cytoplasm in hypertonic medium
 - (c) shrinkage of nucleoplasm
 - (d) none of them
- 8.** Which of the following are covered by a single membrane?
- (a) Mitochondria
 - (b) Vacuole
 - (c) Lysosome
 - (d) Plastid
- 9.** Find out the false sentences
- (a) Golgi apparatus is involved with the formation of lysosomes
 - (b) Nucleus, mitochondria and plastid have DNA; hence they are able to make their own structural proteins
 - (c) Mitochondria is said to be the power house of the cell as ATP is generated in them.
 - (d) Cytoplasm is called as protoplasm
- 10.** Find out the correct sentence
- (a) Enzymes packed in Lysosomes are made through RER (rough endoplasmic reticulum)
 - (b) Rough endoplasmic reticulum and smooth endoplasmic reticulum produce lipid and protein respectively
 - (c) Endoplasmic reticulum is related with the destruction of plasma membrane
 - (d) Nucleoid is present inside the nucleoplasm of eukaryotic nucleus

- 11.** Which cell organelle plays a crucial role in detoxifying many poisons and drugs in a cell?
- (a) Golgi apparatus
 - (b) Lysosomes
 - (c) Smooth endoplasmic reticulum
 - (d) Vacuoles
- 12.** The proteins and lipids, essential for building the cell membrane, are manufactured by
- (a) rough endoplasmic reticulum
 - (b) golgi apparatus
 - (c) plasma membrane
 - (d) mitochondria
- 13.** The undefined nuclear region of prokaryotes are also known as
- (a) nucleus
 - (b) nucleolus
 - (c) nucleic acid
 - (d) nucleoid
- 14.** The cell organelle involved in forming complex sugars from simple sugars are
- (a) endoplasmic reticulum
 - (b) ribosomes
 - (c) plastids
 - (d) golgi apparatus
- 15.** Which out of the following is not a function of vacuole?
- (a) Storage
 - (b) Providing turgidity and rigidity to the cell
 - (c) Waste excretion
 - (d) Locomotion
- 16.** Amoeba acquires its food through a process, termed
- (a) exocytosis
 - (b) endocytosis
 - (c) plasmolysis
 - (d) exocytosis and endocytosis both
- 17.** Cell wall of which one of these is not made up of cellulose?
- (a) Bacteria
 - (b) *Hydrilla*
 - (c) Mango tree
 - (d) Cactus

- 18.** Silver nitrate solution is used to study
- (a) endoplasmic reticulum
 - (b) golgi apparatus
 - (c) nucleus
 - (d) mitochondria
- 19.** Organelle other than nucleus, containing DNA is
- (a) endoplasmic reticulum
 - (b) golgi apparatus
 - (c) mitochondria
 - (d) lysosome
- 20.** Kitchen of the cell is
- (a) mitochondria
 - (b) endoplasmic reticulum
 - (c) chloroplast
 - (d) golgi apparatus
- 21.** Lipid molecules in the cell are synthesized by
- (a) smooth endoplasmic reticulum
 - (b) rough endoplasmic reticulum
 - (c) golgi apparatus
 - (d) plastids
- 22.** Cell arises from pre-existing cell was stated by
- (a) Haeckel
 - (b) Virchow
 - (c) Hooke
 - (d) Schleiden
- 23.** Cell theory was given by
- (a) Schleiden and Schwann
 - (b) Virchow
 - (c) Hooke
 - (d) Haeckel
- 24.** The only cell organelle seen in prokaryotic cell is
- (a) mitochondria
 - (b) ribosomes
 - (c) plastids
 - (d) lysosomes
- 25.** Organelle without a cell membrane is
- (a) ribosome
 - (b) golgi apparatus
 - (c) chloroplast
 - (d) nucleus

- 26.** 1 μm is
- (a) 10^{-6} m
 - (b) 10^{-9} m
 - (c) 10^{-10} m
 - (d) 10^{-3} m
- 27.** Lysosome arises from
- (a) endoplasmic reticulum
 - (b) golgi apparatus
 - (c) nucleus
 - (d) mitochondria
- 28.** Living cells were discovered by
- (a) Robert Hooke
 - (b) Purkinje
 - (c) Leeuwenhoek
 - (d) Robert Brown
- 29.** Select the odd one out
- (a) The movement of water across a semi permeable membrane is affected by the amount of substances dissolved in it.
 - (b) Membranes are made of organic molecules like proteins and lipids
 - (c) Molecules soluble in organic solvents can easily pass through the membrane.
 - (d) Plasma membranes contain chitin sugar in plants

Short Answer Questions

- 30.** Why are lysosomes known as 'suicide-bags' of a cell?
- 31.** Do you agree that "A cell is a building unit of an organism". If yes, explain why?
- 32.** Why does the skin of your finger shrink when you wash clothes for a long time?
- 33.** Why is endocytosis found in animals only?
- 34.** A person takes concentrated solution of salt, after sometime, he starts vomiting. What is the phenomenon responsible for such situation? Explain.
- 35.** Name any cell organelle which is non membranous.
- 36.** We eat food composed of all the nutrients like carbohydrates, proteins, fats, vitamins, minerals and water. After digestion, these are absorbed in the form of glucose, aminoacids, fatty acids, glycerol etc.
What mechanisms are involved in absorption of digested food and water?

- 37.** If you are provided with some vegetables to cook. You generally add salt into the vegetables during cooking process. After adding salt, vegetables release water. What mechanism is responsible for this?
- 38.** If cells of onion peel and RBC are separately kept in hypotonic solution, what among the following will take place? Explain the reason for your answer.
- Both the cells will swell.
 - RBC will burst easily while cells of onion peel will resist the bursting to some extent.
 - a and b both are correct.
 - RBC and onion peel cells will behave similarly.
- 39.** Bacteria do not have chloroplast but some bacteria are photoautotrophic in nature and perform photosynthesis. Which part of bacterial cell performs this?
- 40.** Match the following **A** and **B**
- | (A) | (B) |
|--------------------------------------|---------------------|
| (a) Smooth endoplasmic reticulum | (i) <i>Amoeba</i> |
| (b) Lysosome | (ii) Nucleus |
| (c) Nucleoid | (iii) Bacteria |
| (d) Food vacuoles | (iv) Detoxification |
| (e) Chromatin material and nucleolus | (v) Suicidal bag |
- 41.** Write the name of different plant parts in which chromoplast, chloroplast and leucoplast are present.
- 42.** Name the organelles which show the analogy written as under
- Transporting channels of the cell—
 - Power house of the cell—
 - Packaging and dispatching unit of the cell—
 - Digestive bag of the cell—
 - Storage sacs of the cell—
 - Kitchen of the cell—
 - Control room of the cell—
- 43.** How is a bacterial cell different from an onion peel cell?
- 44.** How do substances like carbon dioxide (CO₂) and water (H₂O) move in and out of the cell?
- 45.** How does amoeba obtain its food?
- 46.** Name the two organelles in a plant cell that contain their own genetic material and ribosomes.
- 47.** Why are lysosomes also known as “scavengers of the cells”?
- 48.** Which cell organelle controls most of the activities of the cell?

- 49.** Which kind of plastid is more common in
- (a) roots of the plant
 - (b) leaves of the plant
 - (c) flowers and fruits
- 50.** Why do plant cells possess large sized vacuole?
- 51.** How are chromatin, chromatid and chromosomes related to each other?
- 52.** What are the consequences of the following conditions?
- (a) A cell containing higher water concentration than the surrounding medium
 - (b) A cell having low water concentration than the surrounding medium.
 - (c) A cell having equal water concentration to its surrounding medium.

Long Answer Questions

- 53.** Draw a plant cell and label the parts which
- (a) determines the function and development of the cell
 - (b) packages materials coming from the endoplasmic reticulum
 - (c) provides resistance to microbes to withstand hypotonic external media without bursting
 - (d) is site for many biochemical reactions necessary to sustain life.
 - (e) is a fluid contained inside the nucleus
- 54.** Illustrate only a plant cell as seen under electron microscope. How is it different from animal cell?
- 55.** Draw a neat labelled diagram of an animal cell.
- 56.** Draw a well labelled diagram of an eukaryotic nucleus. How is it different from nucleoid?
- 57.** Differentiate between rough and smooth endoplasmic reticulum. How is endoplasmic reticulum important for membrane biogenesis?
- 58.** In brief state what happens when
- (a) dry apricots are left for sometime in pure water and later transferred to sugar solution?
 - (b) a Red Blood Cell is kept in concentrated saline solution?
 - (c) the Plasma-membrane of a cell breaks down?
 - (d) rheo leaves are boiled in water first and then a drop of sugar syrup is put on it?
 - (e) golgi apparatus is removed from the cell?
- 59.** Draw a neat diagram of plant cell and label any three parts which differentiate it from animal cell.

Chapter 6

TISSUES

Multiple Choice Questions

1. Which of the following tissues has dead cells?
 - (a) Parenchyma
 - (b) Sclerenchyma
 - (c) Collenchyma
 - (d) Epithelial tissue
2. Find out incorrect sentence
 - (a) Parenchymatous tissues have intercellular spaces
 - (b) Collenchymatous tissues are irregularly thickened at corners
 - (c) Apical and intercalary meristems are permanent tissues
 - (d) Meristematic tissues, in its early stage, lack vacuoles
3. Girth of stem increases due to
 - (a) apical meristem
 - (b) lateral meristem
 - (c) intercalary meristem
 - (d) vertical meristem
4. Which cell does not have perforated cell wall?
 - (a) Tracheids
 - (b) Companion cells
 - (c) Sieve tubes
 - (d) Vessels
5. Intestine absorb the digested food materials. What type of epithelial cells are responsible for that?
 - (a) Stratified squamous epithelium
 - (b) Columnar epithelium
 - (c) Spindle fibres
 - (d) Cuboidal epithelium
6. A person met with an accident in which two long bones of hand were dislocated. Which among the following may be the possible reason?
 - (a) Tendon break
 - (b) Break of skeletal muscle
 - (c) Ligament break
 - (d) Areolar tissue break

7. While doing work and running, you move your organs like hands, legs etc. Which among the following is correct?
- (a) Smooth muscles contract and pull the ligament to move the bones
 - (b) Smooth muscles contract and pull the tendons to move the bones
 - (c) Skeletal muscles contract and pull the ligament to move the bones
 - (d) Skeletal muscles contract and pull the tendon to move the bones
8. Which muscles act involuntarily?
- (i) Striated muscles
 - (ii) Smooth muscles
 - (iii) Cardiac muscles
 - (iv) Skeletal muscles
- (a) (i) and (ii)
 - (b) (ii) and (iii)
 - (c) (iii) and (iv)
 - (d) (i) and (iv)
9. Meristematic tissues in plants are
- (a) localised and permanent
 - (b) not limited to certain regions
 - (c) localised and dividing cells
 - (d) growing in volume
10. Which is *not* a function of epidermis?
- (a) Protection from adverse condition
 - (b) Gaseous exchange
 - (c) Conduction of water
 - (d) Transpiration
11. Select the incorrect sentence
- (a) Blood has matrix containing proteins, salts and hormones
 - (b) Two bones are connected with ligament
 - (c) Tendons are non-fibrous tissue and fragile
 - (d) Cartilage is a form of connective tissue
12. Cartilage is not found in
- (a) nose
 - (b) ear
 - (c) kidney
 - (d) larynx

- 13.** Fats are stored in human body as
- (a) cuboidal epithelium
 - (b) adipose tissue
 - (c) bones
 - (d) cartilage
- 14.** Bone matrix is rich in
- (a) fluoride and calcium
 - (b) calcium and phosphorus
 - (c) calcium and potassium
 - (d) phosphorus and potassium
- 15.** Contractile proteins are found in
- (a) bones
 - (b) blood
 - (c) muscles
 - (d) cartilage
- 16.** Voluntary muscles are found in
- (a) alimentary canal
 - (b) limbs
 - (c) iris of the eye
 - (d) bronchi of lungs
- 17.** Nervous tissue is not found in
- (a) brain
 - (b) spinal cord
 - (c) tendons
 - (d) nerves
- 18.** Nerve cell does not contain
- (a) axon
 - (b) nerve endings
 - (c) tendons
 - (d) dendrites
- 19.** Which of the following helps in repair of tissue and fills up the space inside the organ?
- (a) Tendon
 - (b) Adipose tissue
 - (c) Areolar
 - (d) Cartilage

- 20.** The muscular tissue which function throughout the life continuously without fatigue is
- (a) skeletal muscle
 - (b) cardiac muscle
 - (c) smooth muscle
 - (d) voluntary muscle
- 21.** Which of the following cells is found in the cartilaginous tissue of the body?
- (a) Mast cells
 - (b) Basophils
 - (c) Osteocytes
 - (d) Chondrocytes
- 22.** The dead element present in the phloem is
- (a) companion cells
 - (b) phloem fibres
 - (c) phloem parenchyma
 - (d) sieve tubes
- 23.** Which of the following does not lose their nucleus at maturity?
- (a) Companion cells
 - (b) Red blood cells
 - (c) Vessel
 - (d) Sieve tube cells
- 24.** In desert plants, rate of water loss gets reduced due to the presence of
- (a) cuticle
 - (b) stomata
 - (c) lignin
 - (d) suberin
- 25.** A long tree has several branches. The tissue that helps in the side ways conduction of water in the branches is
- (a) collenchyma
 - (b) xylem parenchyma
 - (c) parenchyma
 - (d) xylem vessels
- 26.** If the tip of sugarcane plant is removed from the field, even then it keeps on growing in length. It is due to the presence of
- (a) cambium
 - (b) apical meristem
 - (c) lateral meristem
 - (d) intercalary meristem

- 27.** A nail is inserted in the trunk of a tree at a height of 1 metre from the ground level. After 3 years the nail will
- (a) move downwards
 - (b) move upwards
 - (c) remain at the same position
 - (d) move sideways
- 28.** Parenchyma cells are
- (a) relatively unspecified and thin walled
 - (b) thick walled and specialised
 - (c) lignified
 - (c) none of these
- 29.** Flexibility in plants is due to
- (a) collenchyma
 - (b) sclerenchyma
 - (c) parenchyma
 - (d) chlorenchyma
- 30.** Cork cells are made impervious to water and gases by the presence of
- (a) cellulose
 - (b) lipids
 - (c) suberin
 - (d) lignin
- 31.** Survival of plants in terrestrial environment has been made possible by the presence of
- (a) intercalary meristem
 - (b) conducting tissue
 - (c) apical meristem
 - (d) parenchymatous tissue
- 32.** Choose the wrong statement
- (a) The nature of matrix differs according to the function of the tissue
 - (b) Fats are stored below the skin and in between the internal organs
 - (c) Epithelial tissues have intercellular spaces between them
 - (d) Cells of striated muscles are multinucleate and unbranched

- 33.** The water conducting tissue generally present in gymnosperm is
- (a) vessels
 - (b) sieve tube
 - (c) tracheids
 - (d) xylem fibres

Short Answer Questions

- 34.** Animals of colder regions and fishes of cold water have thicker layer of subcutaneous fat. Describe why?
- 35.** Match the column **(A)** with the column **(B)**

(A)	(B)
(a) Fluid connective tissue	(i) Subcutaneous layer
(b) Filling of space inside the organs	(ii) Cartilage
(c) Striated muscle	(iii) Skeletal muscle
(d) Adipose tissue	(iv) Areolar tissue
(e) Surface of joints	(v) Blood
(f) Stratified squamous epithelium	(vi) Skin

- 36.** Match the column **(A)** with the column **(B)**

(A)	(B)
(a) Parenchyma	(i) Thin walled, packing cells
(b) Photosynthesis	(ii) Carbon fixation
(c) Aerenchyma	(iii) Localized thickenings
(d) Collenchyma	(iv) Buoyancy
(e) Permanent tissue	(v) Sclerenchyma

- 37.** If a potted plant is covered with a glass jar, water vapours appear on the wall of glass jar. Explain why?
- 38.** Name the different components of xylem and draw a living component?
- 39.** Draw and identify different elements of phloem.

- 40.** Write true (T) or false (F)
- (a) Epithelial tissue is protective tissue in animal body.
 - (b) The lining of blood vessels, lung alveoli and kidney tubules are all made up of epithelial tissue.
 - (c) Epithelial cells have a lot of intercellular spaces.
 - (d) Epithelial layer is permeable layer.
 - (e) Epithelial layer does not allow regulation of materials between body and external environment.
- 41.** Differentiate between voluntary and involuntary muscles. Give one example of each type.
- 42.** Differentiate the following activities on the basis of voluntary (V) or involuntary (I V) muscles.
- (a) Jumping of frog
 - (b) Pumping of the heart
 - (c) Writing with hand
 - (d) Movement of chocolate in your intestine
- 43.** Fill in the blanks
- (a) Lining of blood vessels is made up of——.
 - (b) Lining of small intestine is made up of——.
 - (c) Lining of kidney tubules is made up of——.
 - (d) Epithelial cells with cilia are found in——of our body.
- 44.** Water hyacinth float on water surface. Explain.
- 45.** Which structure protects the plant body against the invasion of parasites?
- 46.** Fill in the blanks
- (a) Cork cells possesses——on their walls that makes it impervious to gases and water.
 - (b) —— have tubular cells with perforated walls and are living in nature.
 - (c) Bone possesses a hard matrix composed of——and ——.
- 47.** Why is epidermis important for the plants?

48. Fill in the blanks

- (a) _____are forms of complex tissue.
- (b) _____have guard cells.
- (c) Cells of cork contain a chemical called_____
- (d) Husk of coconut is made of _____tissue.
- (e) _____gives flexibility in plants.
- (f) _____and_____are both conducting tissues.
- (g) Xylem transports_____and_____from soil.
- (h) Phloem transport_____from_____to other parts of the plant.

Long Answer Questions

- 49.** Differentiate between sclerenchyma and parenchyma tissues. Draw well labelled diagram.
- 50.** Describe the structure and function of different types of epithelial tissues. Draw diagram of each type of epithelial tissue.
- 51.** Draw well labelled diagrams of various types of muscles found in human body.
- 52.** Give reasons for
 - (a) Meristematic cells have a prominent nucleus and dense cytoplasm but they lack vacuole.
 - (b) Intercellular spaces are absent in sclerenchymatous tissues.
 - (c) We get a crunchy and granular feeling, when we chew pear fruit.
 - (d) Branches of a tree move and bend freely in high wind velocity.
 - (e) It is difficult to pull out the husk of a coconut tree.
- 53.** List the characteristics of cork. How are they formed? Mention their role.
- 54.** Why are xylem and phloem called complex tissues? How are they different from one other?
- 55.** (a) Differentiate between meristematic and permanent tissues in plants
 - (b) Define the process of differentiation
 - (c) Name any two simple and two complex permanent tissues in plants.

Chapter 7

DIVERSITY IN LIVING ORGANISMS

Multiple Choice Questions

1. Find out incorrect sentence
 - (a) Protista includes unicellular eukaryotic organisms
 - (b) Whittaker considered cell structure, mode and source of nutrition for classifying the organisms in five kingdoms
 - (c) Both Monera and Protista may be autotrophic and heterotrophic
 - (d) Monerans have well defined nucleus
2. Which among the following has specialised tissue for conduction of water?
 - (i) Thallophyta
 - (ii) Bryophyta
 - (iii) Pteridophyta
 - (iv) Gymnosperms
 - (a) (i) and (ii)
 - (b) (ii) and (iii)
 - (c) (iii) and (iv)
 - (d) (i) and (iv)
3. Which among the following produce seeds?
 - (a) Thallophyta
 - (b) Bryophyta
 - (c) Pteridophyta
 - (d) Gymnosperms
4. Which one is a true fish?
 - (a) Jellyfish
 - (b) Starfish
 - (c) Dogfish
 - (d) Silverfish
5. Which among the following is exclusively marine?
 - (a) Porifera
 - (b) Echinodermata
 - (c) Mollusca
 - (d) Pisces

6. Which among the following have open circulatory system?
- (i) Arthropoda
 - (ii) Mollusca
 - (iii) Annelida
 - (iv) Coelenterata
- (a) (i) and (ii)
(b) (iii) and (iv)
(c) (i) and (iii)
(d) (ii) and (iv)
7. In which group of animals, coelom is filled with blood?
- (a) Arthropoda
 - (b) Annelida
 - (c) Nematoda
 - (d) Echinodermata
8. Elephantiasis is caused by
- (a) Wuchereria
 - (b) Pinworm
 - (c) Planarians
 - (d) Liver flukes
9. Which one is the most striking or (common) character of the vertebrates?
- (a) Presence of notochord
 - (b) Presence of triploblastic condition
 - (c) Presence of gill pouches
 - (d) Presence of coelom
10. Which among the following have scales?
- (i) Amphibians
 - (ii) Pisces
 - (iii) Reptiles
 - (iv) Mammals
- (a) (i) and (iii)
(b) (iii) and (iv)
(c) (ii) and (iii)
(d) (i) and (ii)
11. Find out the false statement
- (a) Aves are warm blooded, egg laying and have four chambered heart
 - (b) Aves have feather covered body, fore limbs are modified as wing and breathe through lungs
 - (c) Most of the mammals are viviparous
 - (d) Fishes, amphibians and reptiles are oviparous

- 12.** Pteridophyta do not have
- (a) root
 - (b) stem
 - (c) flowers
 - (d) leaves
- 13.** Identify a member of porifera
- (a) *Spongilla*
 - (b) *Euglena*
 - (c) *Penicillium*
 - (d) *Hydra*
- 14.** Which is not an aquatic animal?
- (a) Hydra
 - (b) Jelly fish
 - (c) Corals
 - (d) Filaria
- 15.** Amphibians do not have the following
- (a) Three chambered heart
 - (b) Gills or lungs
 - (c) Scales
 - (d) Mucus glands
- 16.** Organisms without nucleus and cell organelles belong to
- (i) fungi
 - (ii) protista
 - (iii) cyano bacteria
 - (iv) archae bacteria
- (a) (i) and (ii)
 - (b) (iii) and (iv)
 - (c) (i) and (iv)
 - (d) (ii) and (iii)
- 17.** Which of the following is not a criterion for classification of living organisms?
- (a) Body design of the organism
 - (b) Ability to produce one's own food
 - (c) Membrane bound nucleus and cell organelles
 - (d) Height of the plant
- 18.** The feature that is not a characteristic of protochordata?
- (a) Presence of notochord
 - (b) Bilateral symmetry and coelom
 - (c) Jointed legs
 - (d) Presence of circulatory system

- 19.** The locomotory organs of Echinodermata are
- (a) tube feet
 - (b) muscular feet
 - (c) jointed legs
 - (d) parapodia
- 20.** Corals are
- (a) Poriferans attached to some solid support
 - (b) Cnidarians, that are solitary living
 - (c) Poriferans present at the sea bed
 - (d) Cnidarians that live in colonies
- 21.** Who introduced the system of scientific nomenclature of organisms
- (a) Robert Whittaker
 - (b) Carolus Linnaeus
 - (c) Robert Hooke
 - (d) Ernst Haeckel
- 22.** Two chambered heart occurs in
- (a) crocodiles
 - (b) fish
 - (c) aves
 - (d) amphibians
- 23.** Skeleton is made entirely of cartilage in
- (a) Sharks
 - (b) Tuna
 - (c) Rohu
 - (d) None of these
- 24.** One of the following is not an Annelid
- (a) Nereis
 - (b) Earthworm
 - (c) Leech
 - (d) Urchins
- 25.** The book Systema Naturae was written by
- (a) Linnaeus
 - (b) Haeckel
 - (c) Whittaker
 - (d) Robert Brown
- 26.** Karl Von Linne was involved with which branch of science?
- (a) Morphology
 - (b) Taxonomy
 - (c) Physiology
 - (d) Medicine

- 27.** Real organs are absent in
- (a) Mollusca
 - (b) Coelenterata
 - (c) Arthropoda
 - (d) Echinodermata
- 28.** Hard calcium carbonate structures are used as skeleton by
- (a) Echinodermata
 - (b) Protochordata
 - (c) Arthropoda
 - (d) Nematoda
- 29.** Differentiation in segmental fashion occurs in
- (a) Leech
 - (b) Starfish
 - (c) Snails
 - (d) Ascaris
- 30.** In taxonomic hierarchy family comes between
- (a) Class and Order
 - (b) Order and Genus
 - (c) Genus and Species
 - (d) Division and Class
- 31.** 5-Kingdom classification has given by
- (a) Morgan
 - (b) R. Whittaker
 - (c) Linnaeus
 - (d) Haeckel
- 32.** Well defined nucleus is absent in
- (a) blue green algae
 - (b) diatoms
 - (c) algae
 - (d) yeast
- 33.** The 'Origin of Species' is written by
- (a) Linnaeus
 - (b) Darwin
 - (c) Hackel
 - (d) Whittaker

34. Meena and Hari observed an animal in their garden. Hari called it an insect while Meena said it was an earthworm. Choose the character from the following which confirms that it is an insect.
- (a) Bilateral symmetrical body
 - (b) Body with jointed legs
 - (c) Cylindrical body
 - (d) Body with little segmentation

Short Answer Questions

35. Write true (T) or false (F)
- (a) Whittaker proposed five kingdom classification.
 - (b) Monera is divided into Archaeobacteria and Eubacteria.
 - (c) Starting from Class, Species comes before the Genus.
 - (d) *Anabaena* belongs to the kingdom Monera.
 - (e) Blue green algae belongs to the kingdom Protista.
 - (f) All prokaryotes are classified under Monera.
36. Fill in the blanks
- (a) Fungi shows——mode of nutrition.
 - (b) Cell wall of fungi is made up of——.
 - (c) Association between blue green algae and fungi is called as——.
 - (d) Chemical nature of chitin is ——.
 - (e) ——has smallest number of organisms with maximum number of similar characters
 - (f) Plants without well differentiated stem, root and leaf are kept in——.
 - (g) ——are called as amphibians of the plant kingdom.
37. You are provided with the seeds of gram, wheat, rice, pumpkin, maize and pea. Classify them whether they are monocot or dicot.
38. Match items of column (A) with items of column (B)
- | (A) | (B) |
|------------------------|--------------------|
| (a) Naked seed | (A) Angiosperms |
| (b) Covered seed | (B) Gymnosperms |
| (c) Flagella | (C) Bryophytes |
| (d) <i>Marchantia</i> | (D) <i>Euglena</i> |
| (e) <i>Marsilea</i> | (E) Thallophyta |
| (f) <i>Cladophora</i> | (F) Pteridophyta |
| (g) <i>Penicillium</i> | (G) Fungi |

39. Match items of column (A) with items of column (B)

(A)

(B)

- | | |
|----------------------------|-------------------|
| (a) Pore bearing animals | (A) Arthropoda |
| (b) Diploblastic | (B) Coelenterata |
| (c) Metameric segmentation | (C) Porifera |
| (d) Jointed legs | (D) Echinodermata |
| (e) Soft bodied animals | (E) Mollusca |
| (f) Spiny skinned animals | (F) Annelida |

40. Classify the following organisms based on the absence/presence of true coelom (i.e., acoelomate, pseudocoelomate and coelomate)

<i>Spongilla</i> ,	Sea anemone,	Planaria,	Liver fluke
<i>Wuchereria</i> ,	<i>Ascaris</i> ,	<i>Nereis</i> ,	Earthworm,
Scorpion,	Birds,	Fishes,	Horse.

41. Endoskeleton of fishes are made up of cartilage and bone; classify the following fishes as cartilagenous or bony

Torpedo,	Sting ray,	Dog fish,
Rohu,	Angler fish,	Exocoetus.

42. Classify the following based on number of chambers in their heart.

Rohu, *Scoliodon*, Frog, Salamander, Flying lizard, King Cobra, Crocodile, Ostrich, Pigeon, Bat, Whale

43. Classify Rohu, *Scoliodon*, Flying lizard, King Kobra, Frog, Salamander, Ostrich, Pigeon, Bat, Crocodile and Whale into the cold blooded/warm blooded animals.

44. Name two egg laying mammals.

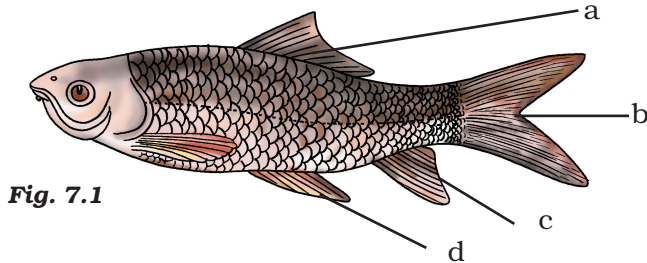
45. Fill in the blanks

- Five kingdom classification of living organisms is given by _____.
- Basic smallest unit of classification is _____.
- Prokaryotes are grouped in Kingdom _____.
- Paramecium* is a protista because of its _____.
- Fungi do not contain _____.
- A fungus _____ can be seen without microscope.
- Common fungi used in preparing the bread is _____.
- Algae and fungi form symbiotic association called _____.

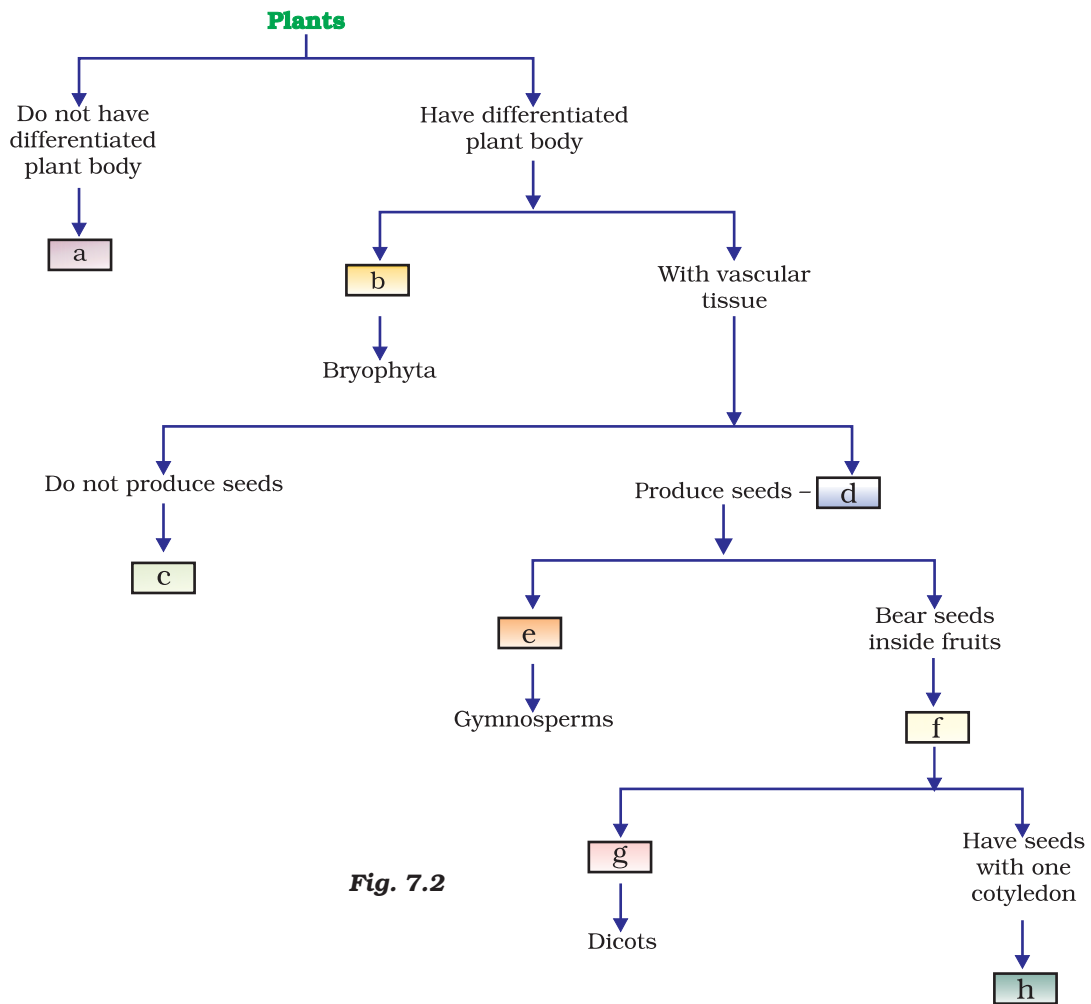
46. Give True (T) and False (F)

- Gymnosperms differ from Angiosperms in having covered seed.
- Non flowering plants are called Cryptogamae.
- Bryophytes have conducting tissue.
- Funaria* is a moss.
- Compound leaves are found in many ferns.
- Seeds contain embryo.

47. Give examples for the following
- Bilateral, dorsiventral symmetry is found in——.
 - Worms causing disease elephantiasis is——.
 - Open circulatory system is found in——where coelomic cavity is filled with blood.
 - are known to have pseudocoelom.
48. Label a,b,c and d. given in Fig. 7.1 Give the function of (b)



49. Fill in the boxes given in Fig. 7.2 with appropriate characteristics/plant group (s)



Long Answer Questions

50. Write names of few thallophytes. Draw a labelled diagram of *Spirogyra*.
51. Thallophyta, bryophyta and pteridophyta are called as 'Cryptogams'. Gymnosperms and Angiosperms are called as 'phanerogams'. Discuss why? Draw one example of Gymnosperm.
52. Define the terms and give one example of each
 - (a) Bilateral symmetry
 - (b) Coelom
 - (c) Triploblastic
53. You are given leech, *Nereis*, *Scolopendra*, prawn and scorpion; and all have segmented body organisation. Will you classify them in one group? If no, give the important characters based on which you will separate these organisms into different groups.
54. Which organism is more complex and evolved among Bacteria, Mushroom and Mango tree. Give reasons.
55. Differentiate between flying lizard and bird. Draw the diagram.
56. List out some common features in cat, rat and bat.
57. Why do we keep both snake and turtle in the same class?

Chapter 13

WHY DO WE FALL ILL

Multiple Choice Questions

1. Which one of the following is not a viral disease?
 - (a) Dengue
 - (b) AIDS
 - (c) Typhoid
 - (d) Influenza
2. Which one of the following is not a bacterial disease?
 - (a) Cholera
 - (b) Tuberculosis
 - (c) Anthrax
 - (d) Influenza
3. Which one of the following disease is not transmitted by mosquito?
 - (a) Brain fever
 - (b) Malaria
 - (c) Typhoid
 - (d) Dengue
4. Which one of the following disease is caused by bacteria?
 - (a) Typhoid
 - (b) Anthrax
 - (c) Tuberculosis
 - (d) Malaria
5. Which one of the following diseases is caused by protozoans?
 - (a) Malaria
 - (b) Influenza
 - (c) AIDS
 - (d) Cholera
6. Which one of the following has a long term effect on the health of an individual?
 - (a) Common cold
 - (b) Chicken pox
 - (c) Chewing tobacco
 - (d) Stress

7. Which of the following can make you ill if you come in contact with an infected person?
- (a) High blood pressure
 - (b) Genetic abnormalities
 - (c) Sneezing
 - (d) Blood cancer
8. AIDS cannot be transmitted by
- (a) sexual contact
 - (b) hugs
 - (c) breast feeding
 - (d) blood transfusion
9. Making anti-viral drugs is more difficult than making anti-bacterial medicines because
- (a) viruses make use of host machinery
 - (b) viruses are on the border line of living and non-living
 - (c) viruses have very few biochemical mechanisms of their own
 - (d) viruses have a protein coat
10. Which one of the following causes kala-azar?
- (a) *Ascaris*
 - (b) *Trypanosoma*
 - (c) *Leishmania*
 - (d) Bacteria
11. If you live in a overcrowded and poorly ventilated house, it is possible that you may suffer from which of the following diseases
- (a) Cancer
 - (b) AIDS
 - (c) Air borne diseases
 - (d) Cholera
12. Which disease is not transmitted by mosquitoes?
- (a) Dengue
 - (b) Malaria
 - (c) Brain fever or encephalitis
 - (d) Pneumonia
13. Which one of the following is not important for individual health?
- (a) Living in clean space
 - (b) Good economic condition
 - (c) Social equality and harmony
 - (d) Living in a large and well furnished house

- 14.** Choose the wrong statement
- (a) High blood pressure is caused by excessive weight and lack of exercise.
 - (b) Cancers can be caused by genetic abnormalities
 - (c) Peptic ulcers are caused by eating acidic food
 - (d) Acne is not caused by staphylococci
- 15.** We should not allow mosquitoes to breed in our surroundings because they
- (a) multiply very fast and cause pollution
 - (b) are vectors for many diseases
 - (c) bite and cause skin diseases
 - (d) are not important insects
- 16.** You are aware of Polio Eradication Programme in your city. Children are vaccinated because
- (a) vaccination kills the polio causing microorganisms
 - (b) prevents the entry of polio causing organism
 - (c) it creates immunity in the body
 - (d) all the above
- 17.** Viruses, which cause hepatitis, are transmitted through
- (a) air
 - (b) water
 - (c) food
 - (d) personal contact
- 18.** Vectors can be defined as
- (a) animals carry the infecting agents from sick person to another healthy person
 - (b) microorganisms which cause many diseases
 - (c) infected person
 - (d) diseased plants

Short Answer Questions

- 19.** Give two examples for each of the following
- (a) Acute diseases
 - (b) Chronic diseases
 - (c) Infectious diseases
 - (d) Non-infectious diseases
- 20.** Name two diseases caused by Protozoans
What are their causal organisms?
- 21.** Which bacterium causes peptic ulcers?
Who discovered the above pathogen for the first time?

- 22.** What is an antibiotic? Give two examples
- 23.** Fill in the blanks
- (a) Pneumonia is an example of _____ disease.
 - (b) Many skin diseases are caused by_____.
 - (c) Antibiotics commonly block biochemical pathways important for the growth of _____.
 - (d) Living organisms carrying the infecting agents from one person to another are called _____.
- 24.** Name the target organs for the following diseases
- (a) Hepatitis targets_____.
 - (b) Fits or unconsciousness targets _____.
 - (c) Pneumonia targets _____.
 - (d) Fungal disease targets _____.
- 25.** Who discovered 'vaccine' for the first time?
Name two diseases which can be prevented by using vaccines.
- 26.** Fill in the blanks
- (a) _____ disease continues for many days and causes_____ on body.
 - (b) _____disease continues for a few days and causes no longer term effect on body.
 - (c) _____ is defined as physical, mental and social well-being and comfort.
 - (d) Common cold is_____ disease.
 - (e) Many skin diseases are caused by_____.
- 27.** Classify the following diseases as infectious or non-infectious.
- (a) AIDS
 - (b) Tuberculosis
 - (c) Cholera
 - (d) High blood pressure
 - (e) Heart disease
 - (f) Pneumonia
 - (g) Cancer
- 28.** Name any two groups of micro-organisms from which antibiotics could be extracted.
- 29.** Name any three diseases transmitted through vectors.

Long Answer Questions

- 30.** Explain giving reasons
 - (a) Balanced diet is necessary for maintaining healthy body.
 - (b) Health of an organism depends upon the surrounding environmental conditions.
 - (c) Our surrounding area should be free of stagnant water.
 - (d) Social harmony and good economic conditions are necessary for good health.
- 31.** What is a disease? How many types of diseases have you studied? Give examples.
- 32.** What do you mean by disease symptoms? Explain giving two examples?
- 33.** Why is immune system essential for our health?
- 34.** What precautions will you take to justify “prevention is better than cure”.
- 35.** Why do some children fall ill more frequently than others living in the same locality?
- 36.** Why are antibiotics not effective for viral disease?
- 37.** Becoming exposed to or infected with an infectious microbe does not necessarily mean developing noticeable disease. Explain.
- 38.** Give any four factors necessary for a healthy person.
- 39.** Why is AIDS considered to be a ‘Syndrome’ and not a disease?

Chapter 15

IMPROVEMENT IN FOOD RESOURCES

Multiple Choice Questions

1. Which one is an oil yielding plant among the following?
 - (a) Lentil
 - (b) Sunflower
 - (c) Cauliflower
 - (d) Hibiscus
2. Which one is not a source of carbohydrate?
 - (a) Rice
 - (b) Millets
 - (c) Sorghum
 - (d) Gram
3. Find out the wrong statement from the following
 - (a) White revolution is meant for increase in milk production
 - (b) Blue revolution is meant for increase in fish production
 - (c) Increasing food production without compromising with environmental quality is called as sustainable agriculture
 - (d) None of the above
4. To solve the food problem of the country, which among the following is necessary?
 - (a) Increased production and storage of food grains
 - (b) Easy access of people to the food grain
 - (c) People should have money to purchase the grains
 - (d) All of the above

- 5.** Find out the correct sentence
- (i) Hybridisation means crossing between genetically dissimilar plants
 - (ii) Cross between two varieties is called as inter specific hybridisation
 - (iii) Introducing genes of desired character into a plant gives genetically modified crop
 - (iv) Cross between plants of two species is called as inter varietal hybridisation
- (a) (i) and (iii)
 - (b) (ii) and (iv)
 - (c) (ii) and (iii)
 - (d) (iii) and (iv)
- 6.** Weeds affect the crop plants by
- (a) killing of plants in field before they grow
 - (b) dominating the plants to grow
 - (c) competing for various resources of crops (plants) causing low availability of nutrients
 - (d) all of the above.
- 7.** Which one of the following species of honey bee is an Italian species?
- (a) *Apis dorsata*
 - (b) *Apis florea*
 - (c) *Apis cerana indica*
 - (d) *Apis mellifera*
- 8.** Find out the correct sentence about manure
- (i) Manure contains large quantities of organic matter and small quantities of nutrients.
 - (ii) It increases the water holding capacity of sandy soil.
 - (iii) It helps in draining out of excess of water from clayey soil.
 - (iv) Its excessive use pollutes environment because it is made of animal excretory waste.
- (a) (i) and (iii)
 - (b) (i) and (ii)
 - (c) (ii) and (iii)
 - (d) (iii) and (iv)

- 9.** Cattle husbandry is done for the following purposes
- (i) Milk Production
 - (ii) Agricultural work
 - (iii) Meat production
 - (iv) Egg production
- (a) (i), (ii) and (iii)
- (b) (ii), (iii) and (iv)
- (c) (iii) and (iv)
- (d) (i) and (iv)
- 10.** Which of the following are Indian cattle?
- (i) *Bos indicus*
 - (ii) *Bos domestica*
 - (iii) *Bos bubalis*
 - (iv) *Bos vulgaris*
- (a) (i) and (iii)
- (b) (i) and (ii)
- (c) (ii) and (iii)
- (d) (iii) and (iv)
- 11.** Which of the following are exotic breeds?
- (i) Brawn
 - (ii) Jersey
 - (iii) Brown Swiss
 - (iv) Jersey Swiss
- (a) (i) and (iii)
- (b) (ii) and (iii)
- (c) (i) and (iv)
- (d) (ii) and (iv)
- 12.** Poultry farming is undertaken to raise following
- (i) Egg production
 - (ii) Feather production
 - (iii) Chicken meat
 - (iv) Milk production

- (a) (i) and (iii)
 - (b) (i) and (ii)
 - (c) (ii) and (iii)
 - (d) (iii) and (iv)
- 13.** Poultry fowl are susceptible to the following pathogens
- (a) Viruses
 - (b) Bacteria
 - (c) Fungi
 - (d) All of the above
- 14.** Which one of the following fishes is a surface feeder?
- (a) Rohus
 - (b) Mrigals
 - (c) Common carps
 - (d) Catlas
- 15.** Animal husbandry is the scientific management of
- (i) animal breeding
 - (ii) culture of animals
 - (iii) animal livestock
 - (iv) rearing of animals
- (a) (i), (ii) and (iii)
 - (b) (ii), (iii) and (iv)
 - (c) (i), (ii) and (iv)
 - (d) (i), (iii) and (iv)
- 16.** Which one of the following nutrients is not available in fertilizers?
- (a) Nitrogen
 - (b) Phosphorus
 - (c) Iron
 - (d) Potassium
- 17.** Preventive and control measures adopted for the storage of grains include
- (a) strict cleaning
 - (b) proper disjoining
 - (c) fumigation
 - (d) all of the above

Short Answer Questions

18. Match the column **A** with the column **B**

(A)

(B)

- | | |
|------------------|---------------------------|
| (a) Catla | (i) Bottom feeders |
| (b) Rohu | (ii) Surface feeders |
| (c) Mrigal | (iii) Middle-zone feeders |
| (d) Fish farming | (iv) Culture fishery |

19. Fill in the blanks

- Pigeon pea is a good source of _____.
- Berseem is an important _____ crop.
- The crops which are grown in rainy season are called _____ crops.
- _____ are rich in vitamins.
- _____ crop grows in winter season.

20. What is a GM crop? Name any one such crop which is grown in India.

21. List out some useful traits in improved crop?

22. Why is organic matter important for crop production?

23. Why is excess use of fertilizers detrimental for environment?

24. Give one word for the following

- Farming without the use of chemicals as fertilizers, herbicides and pesticides is known as _____.
- Growing of wheat and groundnut on the same field is called as _____.
- Planting soyabean and maize in alternate rows in the same field is called as _____.
- Growing different crops on a piece of land in pre-planned succession is known as _____.
- Xanthium* and *Parthenium* are commonly known as _____.
- Causal organism of any disease is called as _____.

25. Match the following **A** and **B**

(A)

(B)

- | | |
|---|----------------------------|
| (a) Cattle used for tilling and carting | (i) Milk producing female |
| (b) Indian breed of chicken | (ii) Broiler |
| (c) Sahiwal, Red Sindhi | (iii) Drought animals |
| (d) Milch | (iv) Local breed of cattle |
| (e) Chicken better fed for obtaining meat | (v) Aseel |

- 26.** If there is low rainfall in a village throughout the year, what measures will you suggest to the farmers for better cropping?
- 27.** Group the following and tabulate them as energy yielding, protein yielding, oil yielding and fodder crop.
Wheat, rice, berseem, maize, gram, oat, pigeon gram, sudan grass, lentil, soyabean, groundnut, castor and mustard.
- 28.** Define the term hybridization and photoperiod.
- 29.** Fill in the blanks
- (a) Photoperiod affect the———.
 - (b) Kharif crops are cultivated from———to———.
 - (c) Rabi crops are cultivated from———to———.
 - (d) Paddy, maize, green gram and black gram are———crops.
 - (e) Wheat, gram, pea, mustard are———crops.
- 30.** Cultivation practices and crop yield are related to environmental condition. Explain.
- 31.** Fill in the blanks
- (a) A total of———nutrients are essential to plants.
 - (b) ———and———are supplied by air to plants.
 - (c) ———is supplied by water to plants.
 - (d) Soil supply———nutrients to plants.
 - (e) ———nutrients are required in large quantity and called as———.
 - (f) ——— nutrients are needed in small quantity for plants and are called ———.
- 32.** Differentiate between compost and vermicompost?
- 33.** Arrange these statements in correct sequence of preparation of green manure.
- (a) Green plants are decomposed in soil.
 - (b) Green plants are cultivated for preparing manure or crop plant parts are used.
 - (c) Plants are ploughed and mixed into the soil.
 - (d) After decomposition it becomes green manure.
- 34.** An Italian bee variety *A. mellifera* has been introduced in India for honey production. Write about its merits over other varieties.
- 35.** In agricultural practices, higher input gives higher yield. Discuss how?

Long Answer Questions

- 36.** Discuss the role of hybridisation in crop improvement.
- 37.** Define (i) Vermicompost
(ii) Green manure
(iii) Bio fertilizer
- 38.** Discuss various methods for weed control.
- 39.** Differentiate between the following
(i) Capture fishery and Culture fishery
(ii) Mixed cropping and Inter cropping
(iii) Bee keeping and Poultry farming
- 40.** Give the merits and demerits of fish culture?
- 41.** What do you understand by composite fish culture?
- 42.** Why bee keeping should be done in good pasturage?
- 43.** Write the modes by which insects affect the crop yield.
- 44.** Discuss why pesticides are used in very accurate concentration and in very appropriate manner?
- 45.** Name two types of animal feed and write their functions.
- 46.** What would happen if poultry birds are larger in size and have no summer adaptation capacity? In order to get small sized poultry birds, having summer adaptability, what method will be employed?
- 47.** Suggest some preventive measures for the diseases of poultry birds.
- 48.** Figure 15.1 shows the two crop fields [Plots A and B] have been treated by manures and chemical fertilizers respectively, keeping other environmental factors same. Observe the graph and answer the following questions.
(i) Why does plot B show sudden increase and then gradual decrease in yield?
(ii) Why is the highest peak in plot A graph slightly delayed?
(ii) What is the reason for the different pattern of the two graphs?

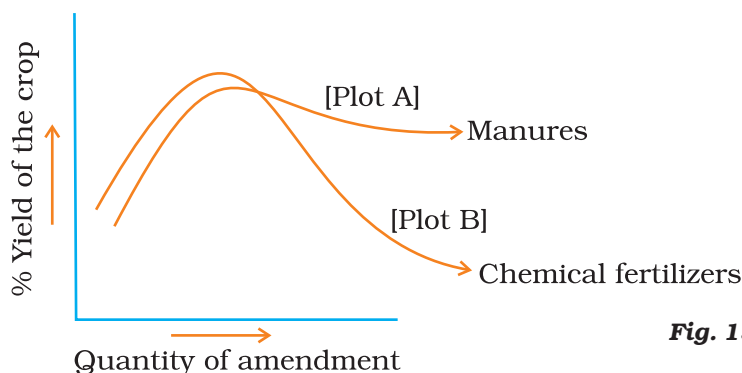


Fig. 15.1

49. Complete the crossword puzzle (Fig.15.2)

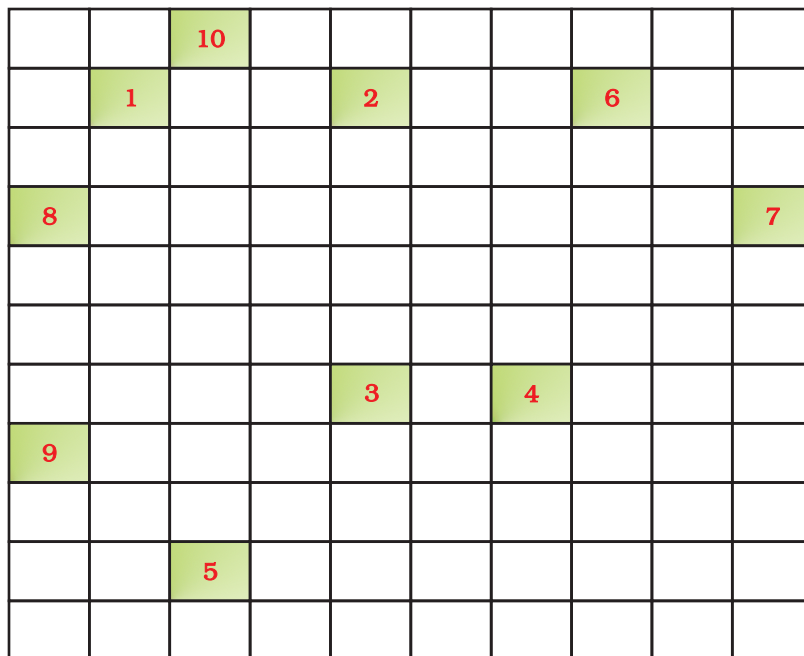


Fig. 15.2

Across

1. Oil yielding plant (9)
3. Crop grown in winter season (4)
5. Fixed by *Rhizobium* (8)
9. Common honey bee (4)

Downward

2. Animal feed (6)
4. A micronutrient (5)
6. Unwanted plant in crop fields (4)
7. An exotic breed of chicken(7)
8. Bottom feeders in fish pond(7)
10. A marine fish (4)