Anand Niketan
Maninagar Campus

CHAPTER – 5
THE FUNDAMENTAL UNIT OF LIFE

1. Define Cell

2. What will happen to a cell if its nucleus is removed?

3. Who proposed the Cell theory ?

4. What is Nucleoid ?

5. Fill in the blanks:-

(a) New cells are formed from_____.

(b) Movement of water molecules from their higher concentration to their lower concentration through a semi- permeable membrane is called_____.

(c) The functional components of cell are _____, _____& _____.

(d) Protoplasm has two parts-_____&_____.

(e) Nucleus, mitochondria & plastids have their own_____&_____.

(f) The shrinkage or contraction of the contents of the cell away from the cell wall is known as_____.

(g) The process by which Amoeba can engulf a food particle is_____.

(h) _____is the manufacture of lipids required for making cell membrane.

(i) A cell that lacks nuclear membrane is called a prokaryotic cell & the nuclear region is called_____.

(j) Movement of materials in & out of the cell takes place by_____& _____.

6. Identifiy and name the following cell structures:

a) The undefined nuclear region of Prokaryotic cell.

b) Site of energy release inside the cell.

7. Name the kind of plastid which is important for photosynthesis in leaves of the plants.

8. Name the two components of chromosomes.

9. When does the chromatin network separate out to form chromosomes?

10. Name the cell organelle that detoxifies poisons and drugs.

11. Name the cell organelle that is associated with protein synthesis.

12. Name a cell which changes its shape.

13. Name the functional unit of DNA that carries genetic informations.

14. Expand the word DNA.

15. State the primary functions of plasma membrane.

16. Name a cell that lacks cell wall

17. Name the main constituent substance present in plant cell wall.

18. Name the cell which is responsible for intracellular transport.

19. Name the Reticulum which has ribosome's attached to it .

20. Name a cell that does not have a nucleus, what are they called?

21. The largest cell in the human body is -

(a) Nerve cell (b) Muscle cell

(c) Liver cell (d) Kidney cell

22. The barrier between the protoplasm and the other environment in an animal cells -

(a) Cell wall (b) Nuclear membrane

(c) Tonoplast (d) Plasma membrane

23. The term 'Cell' was given by -

(a) Leeuwenhoek (b) Robert hooke

(c) Flemming (d) Robert Brown

24. Who proposed the cell theory? -

(a) Schleiden and Schwann (b) Watson and Crick

(c) Darwin and Wallace (d) Mendel and Morgan

25. A plant cell differs from an animal cell in the absence of -

(a) Endoplasmic Reticulum (b) Mitochondria

(c) Ribosome (d) Centrioles

26. Centrosome is found in -

(a) Cytoplasm (b) Nucleus

(c) Chromosomes (d) Nucleolus

27. The power house of a cell is -

(a) Chloroplast (b) Mitochondrion

(c) Golgi apparatus (d) Nucleolus

28. Within a cell the site of respiration (oxidation) is the -

(a) Ribosome (b) Golgi apparatus

(c) Mitochondrion (d) Endoplasmic Reticulum

29. Which is called 'Suicidal Bag'?

(a) Centrosome (b) Lysosome

(c) Mesosome (d) Chromosome

30. Ribosomes are the center for -

(a) Respiration (b) Photosynthesis

(c) Protein synthesis (d) Fat synthesis

31. Double membrane is absent in -

(a) Mitochondrion (b) Chloroplast

(c) Nucleus (d) Lysosome

32. Cell organelle found only in Plant is -

(a) Golgi apparatus (b) Mitochondria

(c) Plastids (d) Ribosomes

33. Organisms lacking nucleus and membrane bound organelle are -

(a) Diploids (b) Prokaryotes

(c) Haploids (d) Eukaryotes

34. Animal cell is limited by -

(a) Plasma membrane (b) Shell membrane

(c) Cell wall (d) Basement membrane

35. The network of Endoplasmic Reticulum is present in the -

(a) Nucleus (b) Nucleolus

(c) Cytoplasm (d) Chromosomes

36. Lysosome are reservoirs of -

(a) Fat (b) RNA

(c) Secretary Glycoprotein (d) Hydrolytic Enzymes

37. The membrane surrounding the vacuole of a plant cell is called -

(a) Tonoplast (b) Plasma membrane

(c) Nuclear membrane (d) Cell wall

38. Cell secretion is done by -

(a) Plastids (b) ER

(c) Golgi apparatus (d) Nucleolus

39. Centrioles are associated with -

(a) DNA synthesis (b) Reproduction

(c) Spindle formation (d) Respiration

40. Main difference between animal cell and plant cell is -

(a) Chromosome (b) Ribosome

(c) Lysosome (d) Endoplasmic Reticulum

41. Animal cell lacking nuclei would also lack in -

(a) Chromosome (b) Ribosome

(c) Lysosome (d) Endoplasmic Reticulum

42. Plasmolysis occurs due to -

(a) Absorption (b) Endosmosis

(c)Osmosis (d)Exosmosis

43. A plant cell becomes turgid due to -

(a) Plasmolysis (b) Exosmosis

(c) Endosmosis (d) Electrolysis

44. Solute concentration is higher in the external solution -

(a) Hypotonic (b) Isotonic

(c) Hypertonic (d) None of the above

45. A cell placed in hypertonic solution will -

(a) Shrink (b) Show Plasmolysis

(c) Swell up (d) No change in shape or size

46. The radiant energy of sunlight is converted to chemical energy and is stored as -

(a) AMP (b) ADP

(c)ATP (d) APP

47. Which of the following organelle does not have membrane?

(a) Ribosome (b) Nucleus

(c) Chloroplast (d) Mitochondria

48. Root hair absorbs water from soil through -

(a) Osmosis (b) Active transport

(c) Diffusion (d) Endocytosis

49. The number of lenses in compound light microscope is -

(a) 2 (b)3 (c) 4 (d)1

50. The history of the cell began in 1665 with the publication of Micrographia in London by -

(a) Robert Hooke (b) Robert Brown

(c) Strasburger (d)Dujardin

51. Cell inclusions are -

(a) Non-living materials present in the cytoplasm

(b) Another name of cell organelle

(c) Cytoskeletal framework of cell

(d) Combined name for cell wall and plasma membrane

52. Which cell organelle is not bounded by a membrane -

(a) Ribosome (b) Lysosome

(c)ER (d)Nucleus

53. Which of the following cellular part possess a double membrane?

(a) Nucleus (b) Chloroplast

(c)Mitochondrion (d)All of the above

54. Cristae and Oxysomes are associated with -

(a) Mitochondria (b) Plastids

(c) Golgi apparatus (d)Plasma membrane

55. Karyotheca is another name of -

(a) Nuclear envelope (b) Nucleus

(c)Nuclear pores (d)Nucleolus

56. Cell organelle that acts as supporting skeletal framework of the cell is -

(a) Golgi apparatus (b) Nucleus

(c) Mitochondria (d) ER

57. Plastids are present in -

(a) Animal cell only

(b) Plant cells only

(c) Both animal cells and Plant cells

(d) Neither animal nor plant cell

58. Cell wall of plant is chiefly composed of -

(a) Hemicellulose (b) Cellulose

(c) Phospholipids (d)Proteins

59. Intercellular connections of plant cells are called -

(a) Middle lamella (b) Micro fibrils

(c) Matrix (d) Plasmodesmata

60. Genes are located on the -

(a) Chromosomes (b) Nucleolus

(c) Nuclear membrane (d)Plasma membrane

61. Chromatin consists of -

(a) RNA (b) DNA

(c) RNA and histones (proteins) (d)DNA and histones (proteins)

62. Different types of chromosomes can be recognized by the positions of the following separating the two arms -

(a) Centromere (b) Genes

(c) Spindle (d)Nucleus

63. Name of the process that requires energy provided by ATP -

(a)Diffusion (b) Osmosis

(c) Active transport (d)Plasmolysis

64. What is the advantage of multicellularity over unicellularity?

65. What are the chromosomes made up of?

66. A cell placed in a solution swells up. What kind of solution is it? Why does it happen?

67. Why are lysosomes known as “suicidal bags”?

68. Why is the nucleus so significant in a cell?

69. Differentiate between plant and animal cells.

70. Give the major functions of the following cell organelles-

71. Why is the cell known the 'fundamental and structural unit of life '

72. What is a semi permeable membrane? what are the differences between semi permeable membrane and selectively permeable membrane?

73. Which cell in the human body does not have the mitochondria?

74. What are plastids? Write their functions?

75. Which structure of animal cells forms the asters of spindle ?

76. Name two semi- autonomous organelles?

77. Which cell organelle is rich in acid hydrolases?

78. Which cell organelles are called ribonucleoprotine particle?

79. Differentiate between SER and RER

80. What is the difference between eukaryotes and prokaryotes?

81. What is the difference between osmosis and diffusion.

82. Where are peroxisomes found ?

83. What are the chemical reactions take place in cytoplasm, nucleoplasm, and in mitochondria?

84. What is Diffusion?

85. What is dictyosomes ?

86. What would happen if an animal cell is kept in distilled water for 24 hours.

87. Give 5 examples of single celled organisms.

88. What are multicellular organisms ? Give an example.

89. Which cell organelle is commonly referred as the suicidal bags of the cell.

90. Name the process through which an amoeba acquires its food from the external surroundings.

91. State the functions of chromosome in a cell.

92. What is Biogenisis?

93. Who discovered Golgi Apparatus?

94. Name the cell organelle which is involved in the formation of lysosomes.

95. What is Endosmosis?

CHAPTER – 6

TISSUES

1. _____ is the process by which unspecialised structures become modified and specialised for performing specific functions.
2. Differentiation results in_____(division/ summation/integration) of labour.
3. The study of the structure of tissues and organs is known as_____.
4. Based on ability to divide, plant tissues may be classified as _____ and _____tissues.
5. Meristematic cells possess the power of cell_____.
6. Permanent tissues are those which have lost the capacity to_____.
7. (Parenchyma/ Collenchyma/ Sclerenchyma) _____ is a widely distributed, simple plant tissue.
8. (Parenchyma/ Collenchyma/ Sclerenchyma) _____is a strong and flexible mechanical tissue.
9. _____ and_____are the conducting tissues or vascular tissues, also called complex tissues.
10. The cell walls of_____(Parenchyma/ Collenchyma/ Sclerenchyma) tissue are made up of cellulose hemicellulose and pectin
11. _____is the parenchyma with large number of chloroplasts.
12. (Xylem/Phloem)_____is popularly known as wood.
13. Xylem is composed of _____,_____ , _____and _____.
14. Tracheids are _____ (living/dead) cells _____ (with/without) protoplasts.

15. Protective tissues include_____and_____.

16. Epithelial cells have_____(little/large) intercellular substances.

17. (Connective/Muscular/Epithelial)_____tissue serve to 'connect' or 'bind' the cells of other tissues in the body and gives them rigidity and support.

18. (Tendon/Ligament/Cartilage)_____is made up of white fibres and connects muscles to bones.

19. Bone is surrounded by a connective tissue known as_____.

20. Striated muscles are_____(voluntary/involuntary) while smooth muscles are _____(voluntary/involuntary).

21. Based on functions performed, list the types of animal tissues.

22. Which tissues are called covering or protective tissues?

23. Where do we find epithelial tissues on animal body?

24. What are the general identifying features of epithelial tissues?

25. Based on layer and shape of cells, how Epithelial tissues can be classified?

26. The surface of Simple squamous epithelium is_____. (choose the correct option)

(a) Permeable

(b) Selectively Permeable

(c) Impermeable

(d) All of the these

27. What is the shape of simple squamous tissue?

28. Where do you find simple squamous in an animal body?

29. What is the main function of simple squamous epithelium?

30. What is simple stratified epithelium? Where do we find these tissues?

31. What is main purpose of stratified epithelium?

32. What is the shape of cuboidal epithelium? Where do we find these tissues?

33. These are somewhat square or cuboid in shape. Cuboidal epithelium is found inkidney tubules, ducts of salivary glands etc.

34. What is the main function of cuboidal epithelium?

35. How will you identify Columnar epithelium? Where are these tissues located?

36. What is the main purpose of columnar epithelium?

37. What type of epithelium tissues are found in respiratory tract and in intestinal lining? How are these tissues different from each other?

38. Where do we find glandular columnar epithelia? What are their main role?

39. What is Haematology?

40. What is the common characteristic in different connective tissues?

41. Name different types of connective tissues?

42. What are the constituents of connective tissues?

43. List the type of intercellular matrix present in the following connective tissues.

(a) Blood

(b) Lymph

(c) Bone

(d) Cartilage

(e) Tendons

(f) Ligaments

(g) Areolar Tissue

(h) Adipose tissue

44. What are constituents of blood tissue?

45. What does plasma contain?

46. Name different types of white blood corpuscles.

47. List the functions of blood cells

48. Where blood is formed in our body?

49. Name the two fluid connective tissues.

50. Why type of inter cellular matrix is found in bone tissue? What are its constituents?

51. Identify the location of the following connective tissues.

(a) Blood

(b) Lymph

(c) Bone

(d) Cartilage

(e) Tendons

52. Which connective tissue connects two bones?

53. Which connective tissue connects bones to muscles?

54. Name the constituents of matrix found in cartilage.

55. Where do we find Areolar tissue? What are its functions?

56. Name the fat-storing tissues? Where are they located? How do these tissue help?

57. What are different types of muscle tissues? Also list which of these are voluntary or involuntary.

58. Why are striated muscles called skeletal muscles?

59. What are identification marks of striated muscles when seen under microscope?

60. Identify which type of muscles tissues are associated with the following body actions

(a) locomotion

(b) iris movement to control size of pupil

(c) peristaltic movements of the oesophagus

(d) heart beat

(e) movement of blood in blood vessels

61. How will you identify cardiac muscles cells under a microscope?

62. Which muscle tissues show characteristics of both striated and unstriated muscles?

63. Where do we find cardiac tissues? What are the functions of cardiac tissues?

64. Do all cells respond to stimuli or this ability is possessed by nerve cells only?

65. What is the unit of nervous tissues?

66. Where do we find nerve cells?

67. How long a nerve cell can be?

68. How are muscles tissues related to nerve cells?

69. Name the three distinct parts of a neuron.

70. What is myelin sheath? Where do we find it?

71. What happens in polio disease?

72. In plants which of the following have the capability of cell division?

(a) Parenchyma

(b) Scelerenchyma

(c) Xylem

(d) Apical Meristem

73. The growth is plants is

(a) limited to certain regions

(b) uniform in all parts

(c) limited to top region

(d) limited to roots only.

74. Intercalary meristems are found

(a) at internodes and base of leaves

(b) at growing tips of roots

(c) beneath the bark

(d) at the tips of stem

75. Cells of the tissue have dense cytoplasm, thin cellulose walls and prominent vacuoles. Identify the tissue.

(a) Collenchyma

(b) Scelerenchyma

(c) Meristem

(d) Parenchyma

76. Dead long and narrow cells in a plant belong to which tissue?

(a) Parenchyma

(b) Scelerenchyma

(c) Collenchyma

(d) Phloem

77. Bone is an example of _____

(a) Muscular tissues

(b) Connective tissues

(c) Epithelial tissues

(d) Nervous tissues

78. Which animal tissue are usually separated from the underlying tissue by an extracellular fibrous basement membrane?

(a) Muscular tissues

(b) Connective tissues

(c) Epithelial tissues

(d) Nervous tissues

79. Oesophagus and the lining of the mouth are also covered with which tissues?

(a) Squamous epithelium

(b) Ciliated epithelium

(c) Areolar connective

(d) Striated muscle tissues

80. Husk of a coconut is made of which tissues?

(a) Parenchyma tissue

(b) Sclerenchymatous tissue

(c) Collenchyma

(d) Xylem

15 IMPROVEMENT IN FOOD RESOURCES

1. _____and_____are the main sources of nutrient supply to crops.
2. _____and_____provide us with all our animal and plant food.
3. The science of growing vegetables, fruits and ornamental plants is called_____.
4. Composting done using earthworms is called_____.
5. Cereals provide us_____(carbohydrates/proteins/fats).
6. Pulses give us_____(carbohydrates/proteins/fats).
7. _____and_____are a rich source of vitamins and minerals.
8. Pests, nematodes etc. are _____ (biotic/abiotic) factors that affect crop production.
9. In order to get maximum returns, different crop combinations are grown on the same field in a pre-planned succession. This process is called_____.
10. Apis dorsata and Apis florae are varieties of_____(Indian/Italian) bee.
11. Apis mellifera is an _____ (India/Italian) variety of honey bee used for commercial production of honey.
12. Crossing between genetically dissimilar plants is called_____.
13. Nutrients required by plants in large quantities are called_____.
14. Organic substances of animal or plant origin that is added to the soil to increase its fertility and structure are called_____.
15. The practice of growing two or more crops simultaneously on the same field is called _____.
16. Unwanted plants in the cultivated field are called_____.
17. Cattle used for farm labour is called_____.
18. Vitamin_____and_____(A, B, C, D , K) levels are kept high in the poultry feeds.
19. Bos indicus are the species of_____.
20. Pomphret, mackerel, tuna, sardines, and Bombay duck are examples of _____(marine/river) fish.
21. Marine fish capture is done by fishing nets guided by _____ and _____.
22. Micro-nutrients or Food additives strengthen_____system of the cattle and improve their_____and stimulate digestion.

23. The basic advantages of inter-cropping are that it maintains soil_____and controls_____.

24. Red Sindhi and Sahiwal are breeds of_____.

25. Xanthium, Cyperinus rotundus and Parthenium plants generally grow along paddy plants. Such plants are called_____.

26. What is domestication?

27. What are the major sources of food? Name the commercial practices we perform to obtain the food.

28. Name the revolution which led to better and efficient production and availability of milk.

29. Define animal husbandry.

30. Name the programmes executed in India to increase food production.

31. What are the various crops seasons in India?

32. Name the approaches used to enhance crop yield.

33. What are milch animals?

34. What are draught animals?

35. What is broiler?

36. Give examples of cereals that give us carbohydrates.

37. Name some pulses that give us proteins.

38. Give examples of oilseeds that provide us fats.

39. Give examples of fodder crops.

40. Name the biotic factors that affect on crop production.

41. Name the nutrients that plants take from air?

42. From where do plants acquire the following nutrients?

(i) Nitrogen

(ii) Hydrogen

43. List the nutrients that plants absorb from soil.

44. What are manures?

45. What are the desirable agronomic characteristics for crop improvement?

46. What are Macro-nutrients?

47. List examples of Macro-nutrients for plants?

48. List the seven micro-nutrients taken by plants?

49. Based on kinds of biological material used, how many types of manures are there?

50. What are fertilizers? Give two examples.

51. Out of manures and fertilizers, which one is nutrient specific?

52. What is the most common source of irrigation in India?

53. Give examples of commonly used irrigation systems in our country?

54. What is vermicompost?

55. Manures are useful for short term benefits or long-term benefits?

56. Fertilizers are useful for short term benefits or long-term benefits?

57. What is organic farming?

58. What is the full form of NPK?

59. What is lodging?

60. What is mixed cropping?

61. Give examples of mixed cropping?

62. Define inter-cropping.

63. Give examples of inter-cropping.

64. Name the two common weeds of wheat and rice crop.

65. What are weeds?

66. Give examples of Pesticides

67. Give examples of fumigants.

68. Give examples of two major weeds that grow during Kharif season.

69. What is meant by sustainable agriculture?

70. What are macronutrients and why are they named so? Give examples also.

71. Which component of food is present in pulses ? Also mention its function in the body.

72. Define-green manure and vermicompost.

73. Differentiate between bee keeping and poultry farming.

74. Give two merits and two demerits of fish culture.

75. Suggest two preventive measures for the diseases of poultry birds.

76. List out four useful traits in improved crop?

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

78. Define the term photoperiod.

79. List any three desirable characters of bee varieties suitable for honey production?

80. 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?

81. Differentiate between the following

(i) Capture fishery and Culture fishery

(ii) Mixed cropping and Inter cropping

(iii) Bee keeping and Poultry farming

82. Give the merits and demerits of fish culture?

83. What do you understand by composite fish culture?

84. Why bee keeping should be done in good pasturage?

85. Cereals largely fulfill which of the following energy requirement?

(a) Proteins

(b) Carbohydrates

(c) Fats

(d) Minerals

86. Which one is not a source of carbohydrate?

(a) Rice

(b) Millets

(c) Sorghum

(d) Gram

87. Which of the following is not included in 'organic farming'?

(a) compost and vermi-compost

(b) chemical fertilizers

(c) green manures

(d) crop rotation

88. Which one of the following species of honey bee is an Italian species?

(a) Apis dorsata

(b) Apis florae

(c) Apis cerana indica

(d) Apis mellifera

89. Which of the following is an incorrect statement regarding improvement in crop production?

(a) Tallness is desired in cereals.

(b) Profuse branching is good for fodder crops

(c) Variety resistance to biotic stress is a good factor to improve crops.

(d) Shorter duration of crop from sowing to harvesting is better option.

90. Which is the oldest breeding method?

(a) introduction

(b) hybridization

(c) mutation

(d) selection

91. Which of the following is not a type of biotic stress?

(a) diseases

(b) insect

(c) frost

(d) nematodes

92. Apiculture deals with

(a) Bee Keeping

(b) Rearing Pigs

(c) Rearing Cows and Buffaloes

(d) Rearing Silk Moths

93. Red Sindhi, Sahilwal, Jersey, Brown Swiss are breeds of

(a) Pigs

(b) Buffaloes

(c) Cows

(d) Fowl

94. Which of the following is not a marine fish?

(a) pomphret

(b) mackerel

(c) catla

(d) sardines