EXERCISE-I (Conceptual Questions) Build Up Your Understanding

CELL WALL, CELL MEMBRANE

1. Cell membrane is composed of :
(1) Proteins and cellulose
(2) Proteins and phospholipids
(3) Proteins and carbohydrates
(4) Proteins, phospholipids and some carbohydrates

2. Carbohydrates are present in the plasmalemma in the form of :-
(1) Hemicellulose (2) Cellulose (3) Starch (4) Glycoprotein

3. According to fluid mosaic model (proposed by Singer & Nicolson) plasma membrane is composed of :-
(i) Cellulose, hemicellulose
(2) Phospholipid and integrated protein
(3) Phospholipid, extrinsic protein, intrinsic protein
(4) Phospholipid and hemicellulose

4. Carbohydrates which present in the cell membrane take part in :-
(I) Transport of substance (2) Cell recognition
(3) Attachment to micro filament (4) Attachment to microtubules

5. Plasma membrane is fluid structure due to presence of :-
(1) Carbohydrate (2) Lipid (3) Glycoprotein (4) Polysaccharide

6. The chemical substance abundantly present in middle lamella is :-
(1) Cutin (2) Chitin (3) Lignin (4) Pectin

7. Which of following boundary is capable of growth, which gradually diminishes as the cell matures ?
(1) Primary cell wall (2) Secondary cell wall
(3) Tertiary cell wall (4) Cell membrane

8. The fluid nature of the membrane indicates function of:-
(1) Cell growth (2) Cell division (3) Endocytosis (4) All the above

9. Plasma membrane is :-
(1) Selectively permeable (2) Permeable
(3) Impermeable (4) Semipermeable

10. The Singer and Nicolson's Model of Plasma membrane differs from the Robertson's model in the-
(1) Number of lipid layers (2) Arrangement of proteins
(3) Arrangement of lipid layers (4) Absence of protein layers

11. Ingestion of solid food by plasma membranes is called
(1) Endosmosis (2) Pinocytosis (3) Cytokinesis (4) Phagocytosis

12. Ingestion of large molecules by animal cell is called -
(1) Diffusion (2) Osmosis (3) Exocytosis (4) Endocytosis

13. In fluid mosaic model of plasma membrane:
(1) Upper layer is non-polar and hydrophilic
(2) Polar layer is hydrophobic
(3) Phospholipids form a bimolecular layer in middle part
(4) Proteins form a middle layer

14. According to widely accepted "fluid mosaic model" cell membranes are semi-fluid, where lipids and integral proteins can diffuse randomly. In recent years, this model has been modified in several respects. In this regard, which of the following statements is incorrect -
(1) Proteins can also undergo flip-flop movements in the lipid bilayer
(2) Many proteins remain completely embeded within the lipid bilayer
(3) Proteins in cell membranes can travel within the lipid bilayer
(4) Proteins can remain confined within certain domains of the membranes

15. The main lipid components of the plant cell membrane are :-
(1) Phosphodiesters (2) Glycocalyx (3) Peptidoglycan (4) Phosphoglycerides

CYTOPLASM : MITOCHONDRIA, GOLGICOMPLEX, LYSOSOME, E.R.

16. Maximum enzymes are found in:-
(1) Lysosomes (2) Mitochondria (3) Nucleus (4) E.R.

17. Rough E.R. mainly responsible for:-
(1) Protein synthesis (2) Cell wall formation
(3) lipid synthesis (4) Cholesterol synthesis

18. Mitochondrial DNA is :-
(1) Naked (2) Circular (3) Double stranded (4) All the above

19. Golgibody orginates from :-
(1) E. R. (2) Mitochondria (3) Nucleus (4) Proplastid

20. Which cell organelle synthesises steroids:-
(1) E. R. (2) Golgibody (3) Peroxisomes (4) Lysosomes

21. Which of the following provides mechanical support and shape to the cell :
(1) Golgi complex (2) Centrioles (3) Lomasomes (4) E.R.

22. Power house of cell is :
(1) Nucleus (2) DNA (3) Mitochondria (4) ATP

23. Hydrolytic enzymes are abundantly found in which cell organelles :-
(1) Ribosome (2) Lysosome
(3) Oxysome (4) Endoplasmic reticulum

24. Which of the following sets of cell organelles contain DNA:-
(1)Mitochondria, peroxysome (2) Plasma membrane, ribosome
(3) Mitochondria, chloroplast (4) Chloroplast, dictyosome

25. Semiautonomous. cell organelle is :-
(1) Mitochondria (2) Ribosome
(3) Plasma membrane (4) Peroxysome

26. Which cell organelles release oxygen :-
(1) Mitochondria (2) Golgi-body (3) Chloroplast (4) Ribosome

27. Chemical modification of substance like glycosylation of protein and lipid occur in :-
(1) Endoplasmic reticulum (2) Golgi body
(3) Lysosome (4) Ribosome

28. The smooth E.R. is generally made up of :-
(1) Cisternae (2) Tubules (3) Vesicle (4) All the above

29. Which of the following is known as "System of membrane":-
(1) Lysosome (2) E.R. (3) Mitochondria (4) Chloroplast

30. Oxysome of mitochondria are concerned with :
(1) Photophosphorylation (2) Oxidative phosphorylation
(3) Photorespiration (4) Digestion

31. Ribophorirt occur on the surface of :-
(1) Rough E.R. (2) Smooth E.R. (3) Golgi body (4)None

32. At which pH lysosomal enzymes remain active :-
(1) pH – 15 (2) pH – 7 (3) pH – 8 (4) pH – 10

33. The cell organelles having abundance of oxidizing enzymesis:
(1) Golgi body (2) Endoplasmic reticulum
(3) Centrioles (4) Mitochondria

34. Main function of golgi-complex is :-
(1) Fermentation (2) Phosphorylation
(3) Respiration (4) Packaging of materials for secretion

35. The nuclear membrane originate from :-
(1) E.R. (2) Golgi cisternae (3) Golgi vesicle (4) Lysosome

36. RER is well developed in cell engaged in the synthesis of :-
(1) Steroids (2) Fats (3) Vitamin (4) Proteins

37. Aerobic respiration is performed by :-
(1) Mitochoridria (2) Chloroplast (3) Ribosome (4) Golgibody

38. GERL concerned with the biogenesis of :-
(1) golgibody (2) E,R, (3) Mitochondria (4) Lysosomes

39. Ground substance present inside the mitochondria is called :-
(1) Stroma (2) Matrix (3) Cell sap (4) Cytoplasm

40. Which cell organelles takes part in the formation of lysosomes :-
(1) Endoplasmic reticulum (2) Golgi bodies
(3) Both 1 and 2 (4) Mitochondria

41. Three morphological forms of golgi complex are :-
(1) Lamellae, tubules and vesicles (2) Cisternae, tubules and vesicles
(3) Cisternae, tubules and lamellae (4) Granum, thalykoids and vesicles

42. During germination which cell organelle converts fatty acid into soluble carbohydrate :-
(1) Peroxisome (2) Glyoxysome (3) Golgj body (4) Lysosome

43. Cellular furnaces of cells are -
(1) Chloroplast (2) Mitochondria (3) Ribosome (4) Nucleus

44. Cristae are found in:-
(1) Surface of grana (2) Surface of plasma membrane
(3) Membrane of Mitochondria (4) Nuclear Membrane

45. A single unit membrane organelle is :-
(1) Ribosomes (2) Mitochondria (3) Chloroplast (4) Lysosomes

46. Double layered organelle are –
(1) Ribosomes (2) Mitochondria (3) Lysosomes (4) Centriole

47. Cisterne is found in –
(1) Only mitochondria (2) Only Endoplasmic Reticulum
(3) Endoplasmic Reticulum and Golgi body (4) Only Golgi body

48. True Statement about Mitochondria is –
(1) Change in shape and size and division both occur
(2) Do not change shape but division occurs
(3) Do not change shape and size and division not occurs
(4) Change shape but division does not occur

49. Which of the following is the site of lipid synthesis –
(1) Rough ER (2) Smooth ER (3) Golgi bodies (4) Ribosome

50. The main organelle involved in modification and routing of newly synthesized proteins to their destinations is -
(1) Endoplasmic Reticulum (2) Lysosome
(3) Mitochondria (4) Chloroplast

51. Chlorophyll in chloroplasts is located in-
(1) Grana (2) Pyrenoid (3) Stroma (4) Both grana and stroma

52. Detoxification of lipid soluble drugs and other harmful compounds, in endoplasmic reticulum is carried out by :-
(1) Cytochrome P450 (2) Cytochrome bf
(3) Cytochrome c (4) Cytochrome a_1–a_3

PLASTIDS, CILIA, FLAGELLA, CENTRIOLES [CENTROSOME], RIBOSOME MICROBODIES, MICROTUBULES AND MICROFILAMENTS

53. Elaioplasts are absent in :
(l) Potato (2) Cocos nucifera
(3) Arachis hypogeal (4) Helianthus

54. In higher plants, the chloroplast are :
(1) Discoidal or oval (2) Spiral
(3) Cupshaped (4) Reticulate

55. DNA is not found in :
(1) Nucleus (2) Mitochondria (3) Chloroplast (4) Ribosome

56. Mitochondria and chloroplast are considered to, be endosymbionts of cell because they :-
(1) Possess their own nucleic acid. (2) Have capacity of ATP synthesis
(3) Do not reproduce (4) All the above

57. Peroxysomes contain :
(1) Hydrolytic enzyme (2) Transferase
(3) lsomerase (4) Oxidising enzyme (Oxidase)

58. Self duplication does not occur in :-
(1) Mitochondria (2) Centrioles (3) Chloroplast (4) Ribosome

59. In which tubulin protein is not present :-
(1) Plasma membrane (2) Cilia
(3) Flagella (4) Microtubules

60. The peroxisomes are associated with the phenomenon of :-
(1) Oxidative anabolism (2) De-gradation of Hp
(3) Anaerobic respiration (4) Photorespiration and degradation of H_2O_2

61. Which of the following termed as highly specialized peroxisomes :-
(1) Glyoxysomes (2) Mitochondria. (3) Golgibody (4) E.R.

62. "Palade particles" are :-
(1) Ribosomes (2) Golgi vesicles (3) Lysosomes (4) Sphaerosomes

63. Red colour of tomato and chilly is due to :-
(1) Lycopene in chloroplast (2) Xanthophylls in chromoplast

(3) Lycopene in chromoplast (4) Anthocyanin in leucoplast

64. Polysome is a chain of :-
(1) Pinesomes (2) Phagosomes (3) Microsomes (4) Ribosomes

65. Anthocyanin pigment occurs in :-
(1) Chromoplasts (2) Amyloplasts (3) Cytoplasm (4) Cell sap

66. Which of the cilia protein is analogous to myosin of muscles :-
(1) Tubulin (2) Dynien (3) Flagellin (4) None of the above

67. Basal body is :
(1) Centriole (2) Plastid (3) Cilia (4) Mitochondria

68. Prokaryotic ribosomes are 70 S, S refers to :-
(1) Svedberg unit (2) Smallest unit (3) Smooth (4) Speed

69. Colour of pericarp and petals is due to :-
(1) Chloroplast (2) Chromoplast (3) Leucoplast (4) Etioplast

70. Arrangement of microtubules in centriole is :- _
(1) 9 + 2 (2) 2 + 9 (3) 11 + 0 (4) 9 + 0

71. How many longitudinal peripheral fibres found in a centriole :-
(1) 2 (2) 9 (3) 5 (4) 7

72. Smallest cell organelle is :-
(1) Lysosome (2) Centrosome (3) Ribosome (4) Golgibody

73. Non pigmented part of chloroplast is called :-
(1) Thylakoids (2) Grana (3) Stroma (4) Lamellae

74. Which of following is not common in chloroplasts & mitochondria ?
(1) Both are present in animal cells (2) Both contain their own genetic material
(3) Both are present in eukaryotic cells (4) Both are present in plant cells

75. 70 S type of ribosomes found in :-
(1) Prokaryotic cells (2) Prokaryotic cell, chloroplasts and mitochondria
(3) Mitochondria (4) Nucleus, mitochondria

76. Cell organelle which is called cell engine is :-
(1) Ribonsome (2) Lysosome (3) vacuoles (4) Endoplasmic reticulum

77. The Ribosomes are made up of –
(1) DNA + Protein (2) RNA + Protein (3) DNA + RNA (4) Only protein

78. functional unit of Chloroplast is –
(1) Stroma (2) Quantasome (3) Oxysomes (4) Peroxysomes

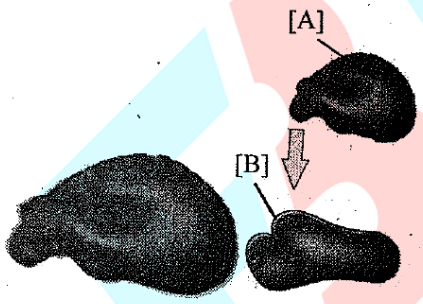
79. Cilia and flagella both have –
(1) 9 + 2 arrangement of microtubules (2) Protective structure of cells
(3) Only present in protozoa Animals (4) Only outgrowth structure of cytoplasm

80. Which of the following pair lack the unit membrane :-
(1) Nucleus & E.R. (2) Mitochondria & chloroplast
(3) Ribosome & nucleolus (4) Golgi body & lysosome

81. Golgibody is concerned with :-
(1) Respiration (2) Secretion (3) Excretion (4) Degradation

82. In which one of the following would you expect to find glyoxysomes ?
(1) Endosperm of wheat (2) Endosperm of castor
(3) Palisade cells in leaf (4) Root hairs

83. Here 'S' (Svedberg's unit) stands for sedimentation coefficient then what are [A] & [B] for eukaryotic cell.



(1) A – 40S B – 60S (2) A – 60S B – 40S
(3) A – 80S B – 60S (4) A – 40S B – 80S

NUCLEUS AND CHROMOSOMES

84. Genome is :-
(1) Part of chromosome (2) Half chromosome
(3) Total DNA in cell (4) A complete set of chromosomes

85. Nucleolar organizer is a :-
(1) Primary construction (2) Secondary constriction
(3) Tertiary constriction (4) Centriole

86. Kinetochore is present in :-
(1) Mitochondria (2) Sphaerosome (3) Chromosome (4) Flagella

87. A complete set of chromosomes inherited as an unit from one parentis known as :-
(1) Karyotype (2) Gene pool (3) Genotype (4) Genome

88. Chromosomes composed of :-
(1) DNA, RNA, Histones, Non histones (2) DNA and Histones
(3) DNA and RNA (4) DNA, RNA and Histories

89. Which part of chromosome is concern with ageing of organism and cancer.

(1) Centromere (2) Telomere (3) Kinetochore (4) Satellite

90. The non-sticky chromosomal ends are known as-
(1) Chromatids (2) Centromere (3) Satellite (4) Telomere

91. Highest arm ratio occur in which chromosome :-
(1) Telocentric (2) Metacentric (3) Submetacentric (4) Acrocentric

92. Nucleus controls the activity of cytoplasm by sending:-
(1) Enzymes (2) cAMP (3) Hormones (4) RNA

93. The protein nucleoplasinin occurs in :-
(1) Nuclear pore complex (2) Sieve cells
(3) Nucleolus (4) Heterochromatin

94. In a human cell 2.2 metre long thread of DNA distributed in :-
(1) one chromosome (2) 23 chromosome
(3) X chromosome (4) 46 chromosome

95. Ribonucleic acid occurs in :-
(1) Nucleus (2) Cytoplasm
(3) Nucleus and cytoplasm (4) Mitochondria and lysosome

96. Nucleus is:-
(1) Single layered structure (2) Three layered structure
(3) Four layered structure (4) Two layered structure

97. Arm ratio in metacentric condition is :-
(1) 1 : 1 (2) 1 : 2 (3) 1 : 3 (4) 2 : 3

98. Part of chromosome after secondary constriction is called :-
(1) Chromomere (2) Telomere (3) Satellite (4) Nucleolar organiser

99. Chromatin is made up of :-
(1) Nucleoprotein (2) Nucleoside (3) Pentose sugar (4) Nitrogenous base

100. If the centromere is sub-median the two arms are unequal then the chromosome is called as
(1) Metacentric (2) Submetacentric (3) Acrocentric (4)Telocentric

101. Nucleolus is formed by :-
(1) Mitochondria (2) Nucleus and Ribosome
(3) Primary constriction (4) Secondary constriction

102. Hetero-chromatin is:-
(1) Darkly stained part of chromatin (2) Lightly stained part of cristae
(3) Lightly stained part of grana (4) Scattered Lobes in cytoplasm

103. Chromosome with centromere at one end:-

(1) Metacentric (2) Submetacentric
(3) Telocentric (4) Acrocentric

104. One genome is which type of set of chromosomes?
(1) Haploid (2) Diploid (3) Triploid (4) Polyploid

105. Part of chromosome which joins with spindle fibres is -
(1) Chromatid (2) Chromonema (3) Chromomere (4) Centromere

106. The cells without nuclei .are present in :
(1) Vascular cambium (2) Root hair
(3) Companion cell (4) Members of seive tube

107. The telomeres of eukaryotic chromosomes consist of short sequences of -
(1) Cytosine rich repeats (2) Adenine rich repeats
(3) Guanine rich repeats (4) Thymine rich repeats

108. If you are provided with root-tips of onion in your class and are asked to count the chromosomes which of the following stages can you most conveniently look into :-
(1) Telophase (2) Anaphase (3) Prophase (4) Metaphase

109. Telomerase is an enzyme which is a :-
(1) RNA (2) Ribonucleoprotein
(3) Repetitive DNA (4) Simple protein

110. Protein synthesis in an animal cell occurs-
(1) On ribosomes present in cytoplasm as well as in mitochondria
(2) On ribosomes present in the nucleolus as well as in cytoplasm
(3) Only on ribosomes attached to the nuclear envelope and endoplasmic reticulum ·
(4) Only on the ribosomes present in cytosol

ANSWER KEY

EXERCISE-I (Conceptual Question)

1.	(4)	**2.**	(4)	**3.**	(3)	**4.**	(2)	**5.**	(2)	**6.**	(4)	**7.**	(1)
8.	(4)	**9.**	(1)	**10.**	(2)	**11.**	(4)	**12.**	(4)	**13.**	(3)	**14.**	(1)
15.	(4)	**16.**	(2)	**17.**	(1)	**18.**	(4)	**19.**	(1)	**20.**	(1)	**21.**	(4)
22.	(3)	**23.**	(2)	**24.**	(3)	**25.**	(1)	**26.**	(3)	**27.**	(2)	**28.**	(2)
29.	(2)	**30.**	(2)	**31.**	(1)	**32.**	(1)	**33.**	(4)	**34.**	(4)	**35.**	(1)
36.	(1)	**37.**	(4)	**38.**	(2)	**39.**	(3)	**40.**	(2)	**41.**	(2)	**42.**	(2)
43.	(2)	**44.**	(3)	**45.**	(4)	**46.**	(2)	**47.**	(3)	**48.**	(1)	**49.**	(2)
50.	(1)	**51.**	(1)	**52.**	(1)	**53.**	(1)	**54.**	(1)	**55.**	(4)	**56.**	(1)
57.	(4)	**58.**	(4)	**59.**	(1)	**60.**	(4)	**61.**	(1)	**62.**	(1)	**63.**	(3)
64.	(4)	**65.**	(4)	**66.**	(2)	**67.**	(1)	**68.**	(1)	**69.**	(2)	**70.**	(4)
71.	(2)	**72.**	(3)	**73.**	(3)	**74.**	(1)	**75.**	(2)	**76.**	(1)	**77.**	(2)
78.	(2)	**79.**	(1)	**80.**	(3)	**81.**	(2)	**82.**	(2)	**83.**	(2)	**84.**	(4)
85.	(2)	**86.**	(3)	**87.**	(4)	**88.**	(1)	**89.**	(2)	**90.**	(4)	**91.**	(4)

92.	(4)	**93.**	(1)	**94.**	(4)	**95.**	(3)	**96.**	(4)	**97.**	(1)	**98.**	(3)
99.	(1)	**100.**	(2)	**101.**	(4)	**102.**	(1)	**103.**	(3)	**104.**	(1)	**105.**	(4)
106.	(4)	**107.**	(3)	**108.**	(4)	**109.**	(2)	**110.**	(1)				