Ravi Maths Tuition Centre

Time : 1 Mins **CELL UNIT OF LIFE 1** **Marks : 1108**

1. Match column I with column II and select the correct option from the codes given below.

	Column I		Column II
A.	Chloroplasts	(i)	Colourless plastids
B.	Chromoplasts	(ii)	Yellow,Orange or red coloured plastids
C.	Leucoplasts	(iii)	Green plastids

a) A-(iii), B-(i), C-(ii) b) A-(iii), B-(ii), C-(i) c) A-(i), B-(iii), C-(ii)
d) A-(i). B-(ii), C-(iii)

2. Experiments on Acetabularia by Hammerling proved the role of _____ .
a) Cytoplasm in controlling differentiation b) Nucleus in heredity
c) Chromosomes in heredity d) Nucleocytoplasmic ratio

3. Which of the following is not a function of cytoskeleton in a cell?
a) Intracellular transport b) Maintenance of cell shape and structure
c) Support of the organelles d) Cell motility

4. The fluid mosaic model explains which aspects of a cell membrane?
a) Only structural aspects b) Only functional aspects
c) Both structural and functional aspects d) Only fluidity of membrane

5. Assertion : The content of inner compartment of mitochondria is called matrix.
Reason : The outer membrane forms a number of infoldings called cristae

a)
If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false.
d) If both assertion and reason are false.

6. Who proposed the fluid mosaic model of plasma membrane?
   a) Camillo Golgi b) Schleidenand Schwann c) Singer and Nicolson
   d) Robert Brown
7. The function of rough endoplasmic reticulum is _____ .
   a) Fat synthesis b) Lipid synthesis c) Protein synthesis
   d) Steroid synthesis
8. What is true about genetic material of a prokaryotic cell?
   a) Lacks histones b) Not enveloped by nuclear membrane
   c) Composed of a single circular DNA molecule d) All of these
9. Genes located on mitochondrial DNA _____ .
   a) Generally show maternal inheritance
   b) Are always inherited from the male parent
   c) Show biparental inheritance like the nuclear genes
   d) Are not inherited
10. Chromatophores take part in :
    a) Respiration b) Photosynthesis c) Growth d) Movement
11. A cell, which is very active in the synthesis and secretion of proteins, would be expected to have:
    a) equal amount of RER and SER b) more SER than RER
    c) more RER than SER d) more Golgi bodies and no ER
12. Plant cells differ from animal cells in having
    a) cell wall b) plastids c) a large central vacuole d) all of these
13. Cell organelle responsible for autolysis is
    a) dictyosome b) lysosome c) peroxisome d) glyoxysome.
14. Centromere is required for:

a) Movement of chromosomes towards poles b) Cytoplasmic cleavage
c) Crossing over d) Transcription

15. Which of the following events does not occur in rough endoplasmic reticulum?
a) Cleavage of signal peptide b) Protein glycosylation
c) Protein folding d) Phospholipid synthesis

16. All plastids have essentially the same structure because
a) they have to perform the same function
b) they are localised in the aerial parts of plants
c)
one type of plastid can differentiate into another type of plastid depending upon the cell requirements
d) all plastids have to store starch, lipids and proteins.

17. Plasmodesmata are:
a) Locomotary structures
b) Membranes connecting the nucleus with plasmalemma
c) Connections between adjacent cells
d) Lignified cemented layers between cells

18. Which of these is not a function of Golgi apparatus?
a) Site of synthesis of glycoproteins and glycolipids b) Secretion
c) Membrane transformation d) Site of protein synthesis

19. Which of the following statement regarding mitochondrial membrane is not correct?
a)
The enzymes of the electron transfer chain are embedded in the outer membrane
b)
The inner membrane is highly convoluted forming a series of infoldings.
c) The outer membrane resembles a sieve.
d) The outer membrane is permeable to all kinds of molecules.

20. In plant cells, peroxisomes are associated with _____ .
a) Photorespiration b) Phototropism c) Photoperiodism
d) Photosynthesis

21. Water soluble pigments found in plant cell :

a) Anthocyanins b) Xanthophylls c) Chlorophylls d) Carotenoids

22. The type of ribosomes found in prokaryotes is:
    a) 80S type b) 70S type c) 30S type d) 50S type.
23. Ribosomes were discovered by _____ .
    a) Golgi b) Porter c) De Robertis d) Palade
24. The desmosomes are concerned with _____ .
    a) Cytolysis b) Celt division c) Cell adherence d) Cellular excretion
25. Flagella of prokaryotic and eukaryotic cells differ in _____ .
    a) Type of movement and placement in cell
    b) Location in cell and mode of functioning
    c) Microtubular organisation and type of movement.
    d) Microtubular organisation and function.
26. In chloroplast, chlorophyll is present in:
    a) Inner membrane b) Thylakoid membrane c) Outer membrane
    d) Stroma
27. Polysome is formed by:
    a) Ribosomes attached to each other in a linear arrangement
    b) Several ribosomes attached to a single mRNA
    c) Many ribosomes attached to a strand of endoplasmic reticulum
    d) A ribosome with several subunits.
28. The best material for the study of structure of cell membrane is
    a) RBC of human b) liver cell c) kidney cell d) muscle cell.
29. Assertion : Leucoplasts perform photosynthesis.
    Reason: Chloroplasts store fats, starch and proteins
    a)
    If both assertion and reason are true and reason is the correct explanation of assertion
    b)
    If both assertion and reason are true but reason is not the correct explanation of assertion
    c) If assertion is true but reason is false.
    d) If both assertion and reason are false.
30. Cell wall shows _____ .

a) Complete permeability b) Semi-permeability
c) Differential permeability d) Impermeability

31. Which of these is not correct regarding ribosomes?
a) Non-membrane bound b) Present in the cytoplasm and on RER
c) Absent in chloroplast and mitochondria
d) Take part in protein synthesis

32. In which of the following parts of mitochondria succinic dehydrogenase enzyme is located?
a) Perimitochondrial space b) Outer membrane c) Matrix
d) Inner membrane

33. Peptide synthesis inside a cell takes place in :
a) Mitochondria b) Chromoplast c) Ribosomes d) Chloroplast

34. The proteins are synthesised at _____ .
a) Ribosomes b) Mitochondria c) Centrosomes d) Golgi bodies

35. Which one of these is not a eukaryote?
a) Euglena b) Anabaena c) Spirogyra d) Agaricus

36. The eukaryotic genome differs from the prokaryotic genome because _____ .
a) DNA is complexed with histones in prokaryotes
b) Repetitive sequences are present in eukaryotes
c) Genes in the former cases are organised into operons
d) DNA is circular and single stranded in prokaryotes

37. Name of Schleiden and Schwann are associated with _____ .
a) Protoplasm as the physical basis of life b) Cell theory
c) Theory of cell lineage d) Nucleus functions as control center of cell

38. Angstrom (A^o) is equal to _____ .
a) 0.01 mm b) 0.001 mm c) 0.0001 mm d) 0.00001 mm

39. Which one is an organelle within an organelle?
a) ER b) Mesosome c) Peroxisome d) Ribosome

40. Which organelle is not a part of the endomembrane system?
a) ER b) Golgi complex c) Lysosomes d) Mitochondria

41. Which chemical property is shared by all types of lipids forming the plasma membrane?

a) Sugar component b) Glycerol backbone c) Phosphate group
d) Hydrophobic region

42. Assertion: Lysosomes are capable of digesting carbohydrates, proteins, lipids and nucleic acids
Reason: Lysosomes are rich in hydrolytic enzymes like lipases, proteases and carbohydrases
a)
If both assertion and reason are true and reason is the correct explanation of assertion
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false
d) If both assertion and reason are false

43. Assertion: The acrocentric chromosome has centromere at the terminal position.
Reason: The metacentric chromosome has centromere slightly away from the middle of the chromosome
a)
If both assertion and reason are true and reason is the correct explanation of assertion
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false.
d) If both assertion and reason are false

44. Which one is apparato reticolare interno?
a) Golgi apparatus b) Endoplasmic reticulum c) Microfilaments
d) Microtubules

45. According to most recent studies, each chromosome consists of
a) single double helical DNA which is highly coiled and folded
b)
variable number of DNA helices, depending upon the length of chromosome

c) many small DNA helices, which are joined by peptide linkages
d) small DNA helices, wrapped around each other like a rope.

46. Prokaryotic cells are generally __ and multiply __ than the eukaryotic cells.
a) smaller, slower b) larger, slower c) smaller, faster d) larger, faster

47. Which of the following is not true for a eukaryotic cell?
a) Cell wall is made up of peptidoglycans.
b) It has 80S type of ribosome present in the cytoplasm
c) Mitochondria contain circular DNA
d) Membrane bound organelles are present

48. Which of the following statements is not true for the cell membrane?
a) It is present in both plant and animal cells.
b) Lipids are present in it as bilayer
c) Proteins may be peripheral or integral in it.
d) Carbohydrates are never found in it.

49. Inner membrane convolutions of a mitochondrion are known as _____ .
a) Lamellae b) Thylakoids c) Grana d) Cristae

50. Which one of these is not correct regarding peroxisomes?
a) Single membrane bound organelles
b) Perform photorespiration in C3 plants
c) Take part in synthesis and storage of lipids
d) Protect a cell from the toxic effects of H_2O_2

51. Who gave the lamellar or sandwich model of cell membrane?
a) Singer and Nicolson b) Danielli and Davson c) J. Robertson
d) None of these

52. Which one of the following is not a constituent of cell membrane?
a) Glycolipids b) Proline c) Phospholipids d) Cholesterol

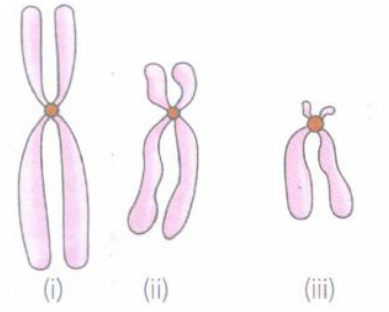
53. Different cells have different sizes. Arrange the following cells in an ascending order of their size and select the correct option.
(i) Mycoplasma
(ii) Ostrich egg
(iii) Human RBCs
(iv) Bacteria

a) $(i) \rightarrow (iv) \rightarrow (iii) \rightarrow (ii)$ b) $(i) \rightarrow (iii) \rightarrow (iv) \rightarrow (ii)$ c) $(ii) \rightarrow (i) \rightarrow (iii) \rightarrow (iv)$
d) $(iii) \rightarrow (ii) \rightarrow (i) \rightarrow (iv)$

54. Ribosomes are produced in _____ .
a) Nucleolus b) Cytoplasm c) Mitochondria d) Golgibody

55. Smooth endoplasmic reticulum is well developed in the cells which synthesise:
a) steroids b) proteins c) carbohydrates d) all of these.

56. Refer to the given figure.



a)

Metacentric	Submetacentric	Acrocentric
(i)	(ii)	(iii)

b)

Metacentric	Submetacentric	Acrocentric
(ii)	(i)	(iii)

c)

Metacentric	Submetacentric	Acrocentric
(ii)	(i)	(iii)

d)

Metacentric	Submetacentric	Acrocentric
(ii)	(iii)	(i)

57. Thecell organelle involved in the glycosylation of proteins is
a) ribosome b) peroxisome c) mitochondrion
d) endoplasmic reticulum.

58. Assertion: The fimbriae are elongated tubular structures made of a special protein.
Reason: The pili are small bristle like fibres sprouting out of the cell.

a)

If both assertion and reason are true and reason is the correct explanation of assertion

b)

If both assertion and reason are true but reason is not the correct explanation of assertion

c) If assertion is true but reason is false.

d) If both assertion and reason are false.

59. Genophore/bacterial genome or nucleoid is made of _____

a) Histones and non-histones b) RNA and histones

c) A singie double stranded DNA d) A single stranded DNA

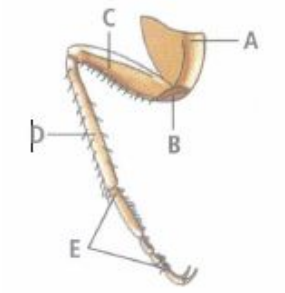
60. The stain used to visualise mitochondria is

a) fast green b) safranin c) acetocarmine d) janus green

61. Organelle/organoid involved in genetic engineering is _____ .

a) Plasmid b) Mitochondrion c) Golgi apparatus d) Lomasome

62. In the given diagram of a leg of cockroach, parts have been indicated by alphabets. Select the answer in which these alphabets have been correctly matched with the parts which they indicate.



a)

A	B	C	D	E
Coxa	Tibia	Tarsus	Femur	Trochanter

b)

A	B	C	D	E
Coxa	Femur	Trochanter	Tarsus	Tibia

c)

A	B	C	D	E
Coxa	Tarsus	Femur	Tibia	Trochanter

d)

A	B	C	D	E
Coxa	Trochanter	Femur	Tibia	Tarsus

63. Offsets are produced by _____ .

a) Parthenocarpy b) Mitotic divisions c) Meiotic divisions

d) Parthenogenesis

64. Element necessary for middle lamella is _____ .

a) Ca b) Zn c) K d) Cu

65. Assertion : The cells that have membrane bound organelles are called eukaryotic
Reason: The cells that lack membrane bound organelles are called prokaryotic.
a)
If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false.
d) If both assertion and reason are false.

66. Lipids are arranged within the membrane with
a)
polar heads toward inner side and the hydrophobic tails toward outerside
b) both heads and tails toward outerside
c) heads toward outerside and tail towards inside
d) both heads and tails toward innerside

67. _____are the microbodies, which take part in glyoxylate pathway, bounded by a single membrane and are usually present in germinating fatty seeds
a) Glyoxysomes b) Peroxisomes c) Sphaerosomes d) Lysosomes

68. The latest model of cell membrane is the
a) Unit membrane model b) Fluid mosaic model
c) Danielli and Davson's model d) Robertson's model.

69. Resolution power is the ability to _____ .
a) Distinguish two trees b) Distinguish two close objects
c) Distinguish amongst organelles d) Magnify image

70. Which of these statements is/are true?
(i) The surface area available for cellular functions in a prokaryotic cell is less than that in a eukaryotic cell.
(ii) The total genome size of a prokaryotic cell is always less than that of a eukaryotic cell.

(iii) Unlike eukaryotes, no special respiratory organelles are found in prokaryotes. Hence they respire at a much lesser rate than eukaryotes.
(iv) Eukaryotic cells show various membrane bound organelles such as chloroplasts and nucleus while ribosomes are the only membrane bound organelles found in prokaryotes.
a) (i) and (ii) b) (iv) only c) (iii) only d) (i), (ii) and (iv)

71. Dye injected into a plant cell might be able to enter an adjacent cell through
a) microtubule b) microfilament c) plasmodesmata d) tight junction.

72. Lysosomes have a high content of _____ .
a) Hydrolytic enzymes b) Lipoproteins c) Polyribosomes
d) DNA ligases

73. Assertion : The chromoplasts contain fat soluble carotenoid pigments like carotene and xanthophylls etc.
Reason : These pigments give yellow, orange or red colour to some parts of the plant.
a)
If both assertion and reason are true and reason is the correct explanation of assertion
b)
If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false.
d) If both assertion and reason are false.

74. A phospholipid molecule is amphipathic and produces two layers coming in contact with Hp The head of phospholipid molecule is
a) at an angle of 40° b) at the outer surface c) on the inner side
d) embedded in protein molecules

75. Assertion: Pili are nonmotile appendages of bacteria
Reason: Pili take part in conjugation.

a)
If both assertion and reason are true and reason is the correct explanation of assertion

b)
If both assertion and reason are true but reason is not the correct explanation of assertion

c) If assertion is true but reason is false.

d) If both assertion and reason are false.

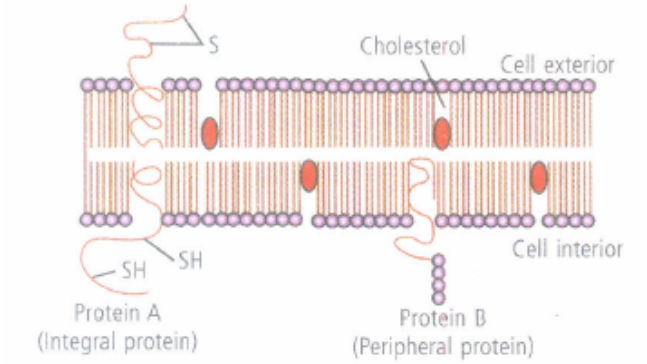
76. Match the following and select the correct answer:

Column I	Column II
(A) Centriole	(i) Infoldings in mitochondria
(B) Chlorophyll	(ii) Thylakoids
(C) Cristae	(iii) Nucleic acids
(D) Ribozymes	(iv)Basal body, cilia or flagella

a) A (iv), B (ii), C (i), D (iii) b) A (i), B (ii), C (iv), D (iii)

c) A (i), B (ill), C (ii), D (iv) d) A (i), B (ill), C (ii), D (iv)

77. A student made a pictorial representation of a eukaryotic cell membrane and labelled the components as follows.



The student has made errors while labelling the components of membrane. Which of the following hold true regarding the error?

(i) Protein A should be labelled as trans-membrane protein only and not as integral protein.

(ii) The polarity of the protein A should be reversed because the cytosolic phase always shows reducing environment.

(iii) Position of cholesterol molecule should be close to polar region as it contains a polar group.

(iv) Protein B should be labelled as integral membrane protein and not as peripheral glycoprotein.

a) (i) and (ii) b) (iii) and (iv) c) (ii) and (iii) d) (i) and (iv)

78. Are self replicating, extra chromosomal segments of double stranded circular and naked DNA, present in a bacterial cell:
    a) Plasmids b) Nucleoid c) Mesosomes d) Bacteriophages
79. If you remove the cell wall from a plant cell and place it into a drop of water
    a) the cell would begin to grow b) the cell would shrink
    c) the cell would burst d) nothing would happen
80. Correct sequence of layers of bacterial cell envelope from outward to inward is
    a) Cell wall $\rightarrow$Glycocalyx $\rightarrow$ Cell membrane
    b) Cell membrane$\rightarrow$Glycocalyx $\rightarrow$Cell wall
    c) Glycocalyx $\rightarrow$Cell wall$\rightarrow$ Cell membrane
    d) Glycocalyx $\rightarrow$Cell membrane$\rightarrow$ Cell wall
81. Protein synthesis in an animal cell occurs _____ .
    a) Only on the ribosomes present in cytosol.
    b)
    Only on ribosomes attached to the nuclear envelope and endoplasmic reticulum.
    c) On-ribosomes present in the nucleolus as well as in cytoplasm.
    d) On ribosomes present in cytoplasm as well as in mitochondria.
82. Which one of the following is not an inclusion body found in prokaryotes?
    a) Polysome b) Phosphate granule c) Cyanophycean granule
    d) Glycogen granule
83. The molecules in the membrane that limit its permeability are the
    a) carbohydrates b) phospholipids c) proteins d) water.
84. Which of the following structures is not found in a prokaryotic cells?
    a) Plasma membrane b) Nuclear envelope c) Ribosome
    d) Mesosome
85. Which one of the following events does not occur in rough endoplasmic reticulum?
    a) Cleavage of signal peptide b) Protein glycosylation
    c) Protein folding d) Phospholipid synthesis

86. Match column I with column II and select the correct option from the codes given below

	column I		column II
A	Leeuwenhoek	(i)	First saw and described a living cell
B	Robert Brown	(ii)	Presence of cell wall is unique to plant cells
C	Schleiden	(iii)	Discovered the nucleus
D	Schwann	(iv)	All plants are composed of different kinds of cell

a) A-(i), B-(iii), C-(iv), D-(ii) b) A-(i), B-(iii), C-(ii), D-(iv)
c) A-(iii), B-(i), C-Iiv), D-(ii) d) A-(i), B-(iv), C-(ii), D-(iii)

87. Select the wrong statement from the following:
a)
Both chloroplasts and mitochondria have an internal compartment the thylakoid space bounded by the thylakoid membrane
b) Both chloroplasts and mitochondria contains DNA
c) The chloroplasts are generally much larger than mitochondria
d)
Both chloroplasts and mitochondria contain an inner and an outer membrane

88. Polyribosomes are aggregation of:
a) ribosomes and rRNA b) peroxisomes
c) several ribosomes held together by a string of mRNA d) rRNA

89. How does a cell rid itself of defective or malfunctioning organelles?
a)
They are engulfed by plastids and stored until export from cell is possible.
b) Defective parts accumulate until the cell itself dies
c) They are exported by exocytosis.
d)
Lysosomes assist in the removal of defective organelles by digesting them.

90. DNA is mainly found in _____ .
a) Nucleus b) Cytoplasm c) Both (a) and (b) d) Nucleolus

91. Assertion: Mitochondria are called 'power houses' of the cell.
Reason: Mitochondria produce cellular energy in the form of ATP.
a)
If both assertion and reason are true and reason is the correct explanation of assertion
b)
If both assertion and reason are true but reason is not the correct explanation of assertion
c) If assertion is true but reason is false
d) If both assertion and reason are false

92. Which one of the following has its own DNA?
a) Mitochondria b) Dictyosome c) Lysosome d) Peroxisome

93. Middle lamella is composed of :
a) Calcium pectate b) Calcium pectates c) Muramic acid
d) Hemicellulose

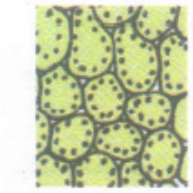
94. Ribosomes of the cytoplasm, chloroplast and mitochondrion are respectively
a) 80S, 80S and 70S b) 80S, 70S and 70S c) 70S in all d) 80S in all

95. Plastids differ from mitochondria on the basis of which of the following features?
a) Presence of two layers of membrane b) Presence of ribosome
c) Presence of thylakoids d) Presence of DNA

96. Microtubules absent in _____ .
a) Mitochondria b) Centriole c) Flagella d) Spindle fibres

97. Mechanical support, enzyme circulation, protein synthesis and detoxification of drugs are the functions of
a) dictyosomes b) chloroplast c) ribosomes d) ER.

98. Tarun observed a slide of white blood cells under microscope. His teacher asked him to draw the diagram. Select the diagram which should be drawn by Tarun.

a)  b)  c)  d) 

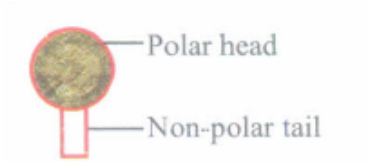
99. Which of the following stains is not used for staining chromosomes?
    a) Basic Fuchsin b) Safranin c) Methylene green d) Carmine

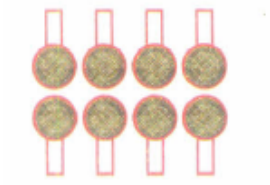
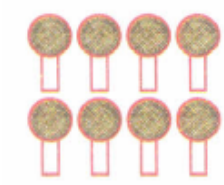
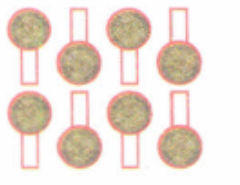
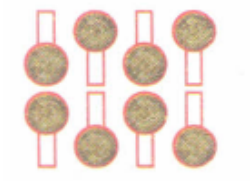
00. What is true about ribosomes?
    a)
    The prokaryotic ribosomes are 80S, where "S" stands for sedimentation coefficient.
    b) These are composed of ribonucleic acid and proteins.
    c) These are found only in eukaryotic cells.
    d) These are self-splicing introns of some RNAs.

01. Microtubules are constituents of:
    a) Centrosome, nucleosome and centrioles
    b) Cilia, flagella and peroxisomes c) Spindle fibres, centrioles and cilia
    d) Centrioles, spindle fibres and chromatin

02. Which group of organelles is involved in synthesis of substances needed by cell?
    a) Lysosome, vacuole, ribosome b) Vacuole, RER, SER
    c) Ribosome, RER, SER d) RER, lysosome, vacuole

03. The lipid molecules present in plasma membrane have polar heads and non-polar tails (as shown in figure). Which option represents the correct arrangement of lipids in lipid bilayer?



a) 
b) 
c) 
d) 

04. The most abundant iipid in the cell membrane is
    a) cutin b) glycolipid c) steroid d) phosphoglycerides

05. Which is the important site of formation of glycoproteins and glycolipids in eukaryotic cells?

a) Golgi bodies b) Polysomes c) Endoplasmic reticulum
d) Peroxisomes

06. Select the mismatch:
a) Gas vacuoles - Green bacteria
b) Large central vacuoles - Animal cells c) Protists - Eukaryotes
d) Methanogens - Prokaryotes

07. Which of the following figures shows the mandibles of cockroach?

a)  b)  c)  d) 

08. Which of the following is correct regarding the structure of a section of cilia / flagella?

a)

Peripheral microtubules (doublets)	Central microtubules (singlets)	Radial spokes	Central sheath
9+0	2	8	1

b)

Peripheral microtubules (doublets)	Central microtubules (singlets)	Radial spokes	Central sheath
9+2	9+0	9	1

c)

Peripheral microtubules (doublets)	Central microtubules (singlets)	Radial spokes	Central sheath
9	2	9	1

d)

Peripheral microtubules (doublets)	Central microtubules (singlets)	Radial spokes	Central sheath
3	6	9	1

09. Nuclear envelope is a derivative of:

a) Membrane of Golgi complex b) Microtubules
c) Rough endoplasmic reticulum d) Smooth endoplasmic reticulum

10. Which of the given statements are correct?
(i) Bacillus subtilis is a Gram (+Ve) bacteria
(ii) Escherichia coli is a Gram (-ve) bacteria.
(iii) Washing of the Gram's stain in Gram (-ve) bacteria is due to high lipid content of the cell wall, which gets dissolved in organic solvents like acetone.
a) (i) and (ii) b) (ii) and (iii) c) (i) and (iii) d) (i), (ii) and (iii)

11. Extranuclear inheritance is due to the presence of genes In
a) mitochondria and chloroplasts b) nucleus and mitochondria
c) nucleus and chloroplasts d) endoplasmic reticulum and mitochondria

12. Read the given statements.
(i) Flat membranous sacs in stroma of chloroplasts
(ii) Infoldings in mitochondria
(iii) Disc shaped sacs in Golgi apparatus
Select the correct option as per the codes given above.
Cristae Cisternae Thylakoids
a) (iii) (i) (ii) b) (i) (ii) (iii) c) (ii) (iii) (i) d) (iii) (ii) (i)

13. The function of glyoxysome is
a) protein metabolism b) carbohydrate metabolism c) fat metabolism
d) protein synthesis

14. Select the incorrect pair.
a) Cell wall - Structural support b) Central vacuole - Storage
c) Amyloplast Starch - storage d) Plasmodesmata - Protection

15. Centromere is a part of _____ .
a) Ribosomes b) Chromosome c) Mitochondria
d) Endoplasmic reticulum

16. Assertion : The endomembrane system includes endoplasmic reticulum (ER), Golgi complex, lysosomes and vacuoles
Reason : Mitochondria, chloroplast and peroxisomes are not the part of endomembrane system because their functions are not coordinated with the same

a)
If both assertion and reason are true and reason is the correct explanation of assertion
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false.
d) If both assertion and reason are false.

17. The Golgi complex plays a major role _____ .
a) In digesting proteins and carbohydrates.
b) As eneigy transferring organelles.
c)
In post translational modification of proteins and glycosidation of lipids.
d) In trapping the light and transforming it into chemical energy.

18. According to the modern concept, cell membrane is
a) solid b) quasifluid c) fluid d) solidified sheath

19. Which of the following options is true for a secretory cell?
a) Golgi apparatus is absent. b) RER is easily observed in the cell.
c) Only SER is present d) Secretory granules are formed in nucleus

20. The osmotic expansion of a cell kept in water is chiefly regulated by:
a) Mitochondria b) Vacuoles c) Plastids d) Ribosomes

21. _____ are granular structures first observed under electron microscope as dense particles by _____ (1955).
a) Ribosomes, George Palade b) Ribosomes, Perner
c) Lysosomes, de Duve d) Peroxisomes, de Duve

22. All plastids have similar structure because they can _____ .
a) Store starch, lipids and proteins
b) Get transformed from one type to another c) Perform same function
d) Be present together

23. Match the cell organelles given in column I with cellular processes in column II and select the correct option from the codes given below

	ColumnI		ColumnII
A	Lysosomes	(i)	Protein synthesis
B	Ribosomes	(ii)	Hydrolytic activity

C	Smooth endoplasmic	(iii)	Steroid synthesis
D	Centriole	(iv)	Fomation of spindle

a)

A	B	C	D
(ii)	(i)	(iii)	(iv)

b)

A	B	C	D
(i)	(iii)	(iv)	(ii)

c)

A	B	C	D
(i)	(iv)	(iii)	(ii)

d)

A	B	C	D
(iv)	(iii)	(i)	(ii)

24. The movement of cilia and flagella is due to the presence of
    a) radial spokes b) central sheath c) singlet microtubules
    d) dyneins.
25. Assertion: The middle lamella is a layer made up of calcium pectate.
    Reason : It holds the different neighbouring cells together.
    a)
    If both assertion and reason are true and reason is the correct explanation of assertion
    b)
    If both assertion and reason are true but reason is not the correct explanation of assertion.
    c) If assertion is true but reason is false
    d) If both assertion and reason are false.
26. A student wishes to study the cell structure under a light microscope having 10X eyepice and 45X objective. He should illuminate the object by which one of the following colours of light so as to get the best possible resolution?
    a) Blue b) Green c) Yellow d) Red
27. The chromosome in which centromere lies slightly away from the middle of the chromosome resulting into one shorter arm and one longer arm, is called as
    a) metacentric b) submetacentric c) acrocentric d) telocentric.
28. The function of intracellular membrane is not to
    a) establish a number of compartments within the cell
    b) provide for the neat spatial organisation of enzymes and pigments
    c) keep the cell rigidity so that it does not collapse
    d)
    provide a system of channel for the distribution of nutrients within the cell

29. Identify the cells whose secretion protects the lining of gastro-intestinal tract from various enzymes.
    a) Goblet Cells b) Oxyntic Cells c) Duodenal Cells d) Chief Cells
30. Which one of the following does not differ in E.coli and Chlatnydomonasl.
    a) Ribosomes b) Chromosomal organization c) Cell wall
    d) Cell membrane
31. Some of the enzymes which are associated in converting fats into carbohydrates, are present in _____ .
    a) Liposomes b) Golgi bodies c) Microsomes d) Glyoxysomes
32. The prokaryotic flagella possess _____ .
    a) Unit membrane enclosed fibre b) Protein membrane enclosed fibre
    c) '9+2' membrane enclosed structure
    d) Helically arranged protein molecule
33. Centrioles arise from
    a) pre-existing centrioles' b) de novo c) nuclear envelope
    d) sphaerosome.
34. Mitochondria and chloropast are:
    (a) Semi-autonomous organelles
    (b) Formed by division of pre-existing orgnelles and they contain DNA but lack protein synthesizing machinery
    Which one of the following options is correct?
    a) Both (a) and (b) are false b) Both (a) and (b) are correct
    c) (b) is true but (a) is false d) (a) is true but (b) is false
35. An organelle with an internal cross-section showing characteristic "9 + 2" array is the:
    a) microtubule b) microfilament c) cilium or flagellum
    d) cytoskeleton.
36. If you remove the fimbriae from the bacterial cell, which of the following would you expect to happen?
    a) The bacteria could no longer swim.
    b) The bacteria would not adhere to the host tissue.
    c) Transportation of molecules across the membrane would stop.
    d) The shape of bacteria would change
37. Bright colour of petals is due to the presence of

a) chloroplast b) anthocyanin c) elaioplast d) amyloplast.

38. The figures of cork cells as seen by Robert Hooke were published in the book

a) Origin of species b) Species plantarum c) Genera plantarum
d) Micrographia.

39. Select the correct statement from the following regarding cell membrane

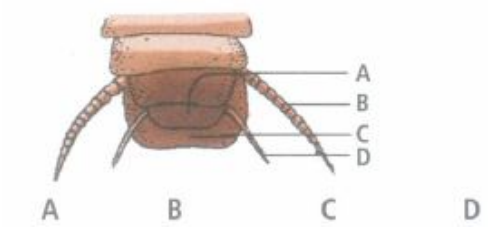
a)
Lipids are arranged in a bilayer with polar heads towards the inner part

b)
Fluid mosaic model of cell membrane was proposed by Singer and Nicolson

c) Na+ And K+ Ions move across cell membrane by passive transport

d) Proteins make up 60 to 70% of the cell membrane

40. The given figure represents posterior region of male cockroach. Identify the parts labelled as A, B, C and D.



a)

A	B	C	D
9th sternurn	Anal style	1Qth tergurn	Anal circus

b)

A	B	C	D
Anal style	Anal circus	10th tergurn	9th sternum

c)

A	B	C	D
9th sternurn	Anal circus	10th tergurn	Anal style

d)

A	B	C	D
9th tergurn	Anal circus	10th sternurn	Anal style

41. According to unit membrane structure, the thickness of plasma membrane is about

a) 35A b) 20A c) 75A d) 100A

42. Assertion : The Golgi apparatus mainly performs the function of packaging materials

Reason : Materials to be packed in the form of vesicles from the ERfuse with trans face of the Golgi apparatus

a)
If both assertion and reason are true and reason is the correct explanation of assertion
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false
d) If both assertion and reason are false.

43. Mitochondrial cristae are sites of _____ .
a) Breakdown of macromolecules b) Protein synthesis
c) Phosphorylation of flavoproteins d) Oxidation-reduction reactions

44. The structure that help some bacteria to attach to rocks and for host tissues are :
a) Holdfast b) Rhizoids c) Fimbriae d) Mesosomes

45. Assertion: Peripheral proteins are partially or totally buried in the membrane.
Reason: Integral proteins lie on the surface of membrane
a)
If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false
d) If both assertion and reason are false.

46. Which one of the following is not considered as a part of the endomembrane system?
a) Golgi complex b) Peroxisome c) Vacuole d) Lysosome

47. Major site for synthesis of lipids is:
a) Symplast b) SER c) RER d) Nucleoplasm

48. As they release hydrolase that digest old and damaged cells, the term suicide bags is aptly used by cell biologists for
a) Golgi bodies b) lysosomes c) glyoxysomes d) peroxisomes.

49. Which of the following options is correct about structures visible in the cross-section of a centriole?

a)

Peripheral Central microtubules (triplets)	Central microtubules (singlets)	Hub	Spoke	triplet bridge
9	2	1	9	9

b)

Peripheral Central microtubules (triplets)	Central microtubules (singlets)	Hub	Spoke	triplet bridge
9	2	9	9	9

c)

Peripheral Central microtubules (triplets)	Central microtubules (singlets)	Hub	Spoke	triplet bridge
9	2	1	2	2

d)

Peripheral Central microtubules (triplets)	Central microtubules (singlets)	Hub	Spoke	triplet bridge
9	0	1	9	9

50. A scientist isolated the plasma membranes from some animal cells and put them in a solution of chemicals that stabilised the membranes. When she added a small amount of a salt solution, she discovered that although the membranes seemed intact, the amount of protein in the stabilising solution had increased. These new proteins in the stabilising solution were probably

a) peripheral proteins b) integral proteins c) lipid-anchored proteins
d) trimeric G proteins

51. Amyloplasts, elaioplasts and aleuroplasts belong to ___ category of plastids.
    a) chloroplasts b) chromoplasts c) leucoplasts d) all of these
52. Many ribosomes may associate with a single mRNA to form multiple copies of a polypeptide simultaneously. Such strings of ribosomes are termed as _____ .
    a) Plastidome b) Polyhedral bodies c) Polysome d) Nucleosome
53. What is true of membrane lipids and proteins?
    a) None can flip-flop b) Both can flip-flop
    c) Proteins can flip-flop but lipids cannot
    d) Lipids can flip-flop but proteins cannot
54. These are the densely stained reticular structures present near the nucleus, consisting of many flat, disc shaped cisternae of 0.5 - 1.0 urn diameter. These are
    a) chloroplasts b) endoplasmic reticulum c) mitochondria
    d) Golgi apparatus.
55. Select the wrong statement with respect to the structure of a plant cell:
    a) Cellulosic cell wall is present inside the cell membrane.
    b) Centrioles are usually absent c) A large central vacuole is present
    d)
    Golgi apparatus is formed of a number of unconnected units called dictyosomes
56. Read the given statements and select the correct option.
    Statement 1 : The cisternae in Golgi complex have cis face and trans face.
    Statement 2: The cis face is also called forming face and trans face is also called maturing face.
    a) Both statements 1 and 2 are correct
    b) Statement 1 is correct but statement 2 is incorrect
    c) Statement 1 is incorrect but statement 2 is correct
    d) Both statements 1 and 2 are incorrect
57. Important site for formation of glycoproteins and glycolipids is _____ .
    a) Vacuole b) Golgi apparatus c) Plastid d) Lysosome

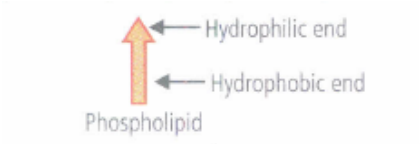
58. Which of the following statements about inclusion bodies is incorrect?
    a) They lie free in the cytoplasm
    b) These represent reserve material in cytoplasm.
    c) They are not bound by any membrane
    d) These are involved in ingestion of food particles.

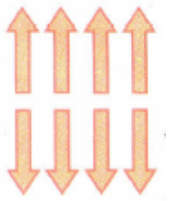
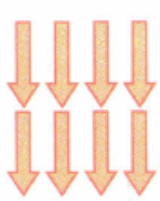
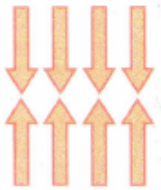
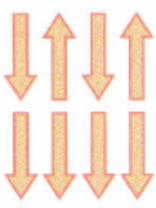
59. Ribosomes are the centre for _____ .
    a) Respiration b) Photosynthesis c) Protein synthesis
    d) Fat synthesis

60. Cellular organelles with membranes are:
    a) Lysosomes, Golgi apparatus and mitochondria
    b) Nuclei, ribosomes and mitochondria
    c) Chromosomes, ribosomes and endoplasmic reticulum
    d) Endoplasmic reticulum, ribosomes and nuclei

61. The solid linear cytoskeletal elements having a diameter of 6nm and made up of a single type of monomer are known as:
    a) Microfilaments b) Intermediate filaments c) Lamins
    d) Microtubules

62. A red blood corpuscle (RBC) was kept in a solution and treated so that it became inside-out. What will be the polarity of the phospholipid bilayer in this cell?



a) 
b) 
c) 
d) 

63. Match column I with column II and select the correct option from the codes given below.

	ColumnI		ColumnII
A	Nucleolus	(i)	Lipid stoage
B	Sphaerosomes	(ii)	Glycolate metabolism
C	Peroxisomes	(iii)	Transport of macromolecules
D	Plasmodesmata	(iv)	RNA synthesis

a)

A	B	C	D
(iv)	(i)	(iii)	(ii)

b)

A	B	C	D
(i)	(ii)	(iv)	(iii)

c)

A	B	C	D
(iv)	(i)	(ii)	(iii)

d)

A	B	C	D
(i)	(ii)	(iii)	(iv)

64. Match column I with column II and select the correct option from the codes given below.

	ColumnI		ColumnII
A	Mitochondria	(i)	Without membrane
B	Lysosomes	(ii)	Single membrane
C	Ribosomes	(iii)	Double membrane
D	Nucleus		

a)

A	B	C	D
(i)	(ii)	(iii)	(iii)

b)

A	B	C	D
(ii)	(i)	(i))	(ii)

c)

A	B	C	D
(iii)	(ii)	(i))	(ii)

d)

A	B	C	D
(ii)	(iii)	(i)	(iii)

65. Cytoskeleton is made up of:
    a) Callose deposits b) Cellulosic microfibrils
    c) Proteinaceous filaments d) Calcium carbonate granules
66. Study the following statements regarding mitochondria and select the correct ones.
    (i) These are the sites of aerobic respiration.
    (ii) Matrix contains single, circular dsDNA molecule, a few RNA molecules, 70S ribosomes.
    (iii) Mitochondria divide by fission.
    (iv) Mitochondria are fully-autonomous.
    a) (i) and (ii) b) (iii) and (iv) c) (i). (ii) and (iii) d) (i), (ii), (iii) and (iv)
67. The main arena of various types of activities of a cell is:
    a) Plasma membrane b) Mitochondrian c) Cytoplasm d) Nucleus
68. Which one of the following elements is responsible for maintaining turgor in cells?
    a) Potassium b) Sodium c) Magnesium d) Calcium
69. Cell membrane is selective permeable. This means that it:
    a) allows all materials to pass through
    b) allows only water to pass through

c) allows only certain materials to pass through
d) allows only ions to pass through.

70. Which of the following represents the features of lysosomes
a) A lower pH than the cytoplasm b) Reduced hydrolase activity
c) Double membrane envelope d) All of these

71. Oxysomes or F_0-F_1 particles occur on _____ .
a) Thylakoids b) Mitochondrial surface
c) Inner mitochondrial membrane d) Chloroplast

72. Which of the following is an energy dependent process?
a) Facilitated diffusion b) Active transport c) Endosmosis
d) Exosmosis

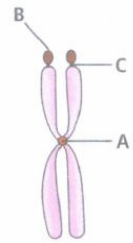
73. The mechanism of ATP formation both in chloroplast and mitochondria is explained by _____ .
a) Relay Pump Theory of Godlewski b) Cholodny-Went's Model
c) Chemiosmotic Theory d) Munch's Mass Flow Hypothesis

74. Balbiani rings are sites of:
a) Nucleotide synthesis b) Polysaccharide synthesis
c) RNA and protein synthesis d) Lipid synthesis

75. Unicellular microscopic organisms were first studied by
a) Robert Hooke b) Priestley c) Pasteur d) Leeuwenhoek.

76. Cell theory was formulated by
a) Robert Hooke b) Leeuwenhoek c) Marcello Malpighi
d) Schleiden and Schwann

77. What does A, B and C represent in the given figure of a chromosome?



a)

A	B	C
Centriole	Satellite	Primary constriction

b)

A	B	C
Centriole	Satellite	Secondary constriction

c)

A	B	C
Centromere	Satellite	Secondary constrictionn

d)

A	B	C
Centromere	Satellite	Primary constriction

78. Addition of new cell wall particles amongst the existing ones is _____ .
    a) Deposition b) Apposition c) Intussusception d) Aggregation
79. Ribosomal RNA is actively synthesized in _____ .
    a) Lysosomes b) Nucleolus c) Nucleoplasm d) Ribosomes
80. Cells which are secretory in function have abundant:
    a) lysosomes b) endoplasmic reticulum c) dictyosomes
    d) osteosomes.
81. Cell organelle extracted from endosperm of germinating castor beans are
    a) glyoxysomes b) vacuoles c) mitochondria d) none of these
82. Which of the following is true for nucleolus?
    a) It takes part in spindle formation
    b) It is a membrane-bound structure
    c) Larger nucleoli are present in dividing cells
    d) It is a site for active ribosomal RNA synthesis
83. A major break through in the studies of cells came with the development of electron microscope. This is because _____ .
    a)
    The resolving power of the electron microscope is 200-350 nm as compared to 0.1-0.2 for the light microscope.
    b)
    Electron beam can pass through thick materials, whereas light microscopy requires thin sections.

c)

The electron microscope is more powerful than the light microscope as it uses a beam of electrons which has wavelength much longer than that of photons.

d)

The resolution power of the electron microscope in much higher than that of the light microscope.

84. 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?

a) Proteins in cell membranes can travel within the lipid bilayer.

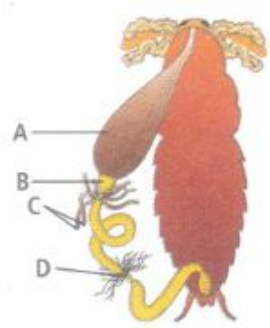
b) Proteins can also undergo flip-flop movements in the lipid bilayer.

c)

Proteins can remain confined within certain domains of the membrane.

d) Many proteins remain completely embedded within the lipid bilayer.

85. The given figure shows alimentary canal of cockroach. Identify the parts labelled as A to D and select the correct option.



a)

A	B	C	D
Gizzard	Crop	Hepaticcaeca	Malpighiantubules

b)

A	B	C	D
Crop	Gizzard	Hepaticcaecae	Malpighiantubules

c)

A	B	C	D
Crop	Gizzar	Malpighian tubules	Hepaticcaecae

d)

A	B	C	D
Gizzar	Crop	Malpighiantubule	Hepaticcaeca

86. Which of the following statements is incorrect for centrioles?
    a) Both the centrioles in a centrosome lie perpendicular to each other
    b) Central proteinaceous hub is missing in a centriole
    c) Each centriole has an organisation like that of a cartwheel
    d) Centrosome usually contains 2 cylindrical centrioles.

87. Match column I with column II and select the correct option from the codes given below.

	Column I		**Column II**
A	Dictysomes	(i)	Storage
B	Mitochondria	(ii)	Photosynthesis
C	Vacuoles	(iii)	Transparent
D	Grana	(iv)	Secretion
		(v)	Respiration

    a) (iv) (v) (i) (ii) b) (i) (ii) (iv) (iii) c) (iv) (i) (ii) (iii) d) (i) (ii) (iii) (iv)

88. In fluid mosaic model of plasma membrane _____ .
    a) Upper layer is non-polar and hydrophilic.
    b) Upper layer is polar and hydrophobic.
    c) Phospholipids form a bimolecular layer in middle part.
    d) Proteins form a middle layer.

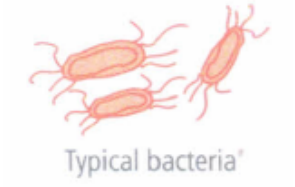
89. Read the given statements and select the correct option.
    Statement 1 : Chloroplast and mitochondria are semiautonomous bodies
    Statement 2: Chloroplast and mitochondria have their own DNA and protein synthesising machinery
    a) Both statements 1 and 2 are correct
    b) Statement 1 is correct but statement 2 is incorrect
    c) Statement 1 is incorrect but statement 2 is correct.
    d) Both statements 1 and 2 are incorrect.

90. Mesosomes are the infoldings of cell membrane, which
(i) are present in both prokaryotic and eukaryotic cells.
(ii) help in cell wall formation, DNA replication and respiration.
(iii) increase the surface area of plasma membrane.
a) (i) and (ii) b) (ii) and (iii) c) (i) and (iii) d) (i), (ii) and (iii).

91. Which of the following cell organelles are named after the name of its discoverer?
a) ER b) DNA c) Golgi bodies d) Mitochondria

92. Stroma in the chloroplasts of higher plant contains:
a) Light-dependent reaction enzymes b) Ribosomes c) Chlorophyll
d) Light- independent reaction enzymes

93. Which of the following is the correct match?
a) Amyloplasts - Store carbohydrates
b) Elaioplasts - Store fats and oils c) Aleuroplasts - Store proteins
d) All of these

94. Which of the following is enveloped by a nuclear membrane?
a) 

b) 

c) 

d) None of these

95. Assertion: The arrangement of axonemai microtubules in cilia or flagella is called 9 + 2 array
Reason : The axoneme usually has nine pairs or doublets of radially arranged peripheral microtubules,and a pair of centrally located microtubules
a)
If both assertion and reason are true and reason is the correct explanation of assertion
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false.
d) If both assertion and reason are false.

96. A major site for synthesis of lipids is:
a) SER b) Symplast c) Nucleoplasm d) RER

97. Assertion: The endoplasmic reticulum which lacks ribosomes is called smooth endoplasmic reticulum (SER).
Reason: SER is mainly involved in protein synthesis.
a)
If both assertion and reason are true and reason is the correct explanation of assertion.
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false
d) If both assertion and reason are false.

98. Which of the following statements regarding sphaerosomes is not correct?
a) Abundant in the endosperm cells of oil seeds
b) Bounded by a single membrane
c) Take part in synthesis and storage of lipids
d) Take part in photorespiration

99. Golgi complex playa major role in:
a) Post translational modification of proteins and glycosidation of lipids
b) Trapping light and transforming it into chemical energy
c) Digesting proteins and carbohydrates
d) An energy transforming organelle

100. Assertion: A plant cell bursts if placed in water
Reason: High turgor pressure causes bursting of plant cells
a)
If both assertion and reason are true and reason is the correct explanation of assertion
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false
d) If both assertion and reason are false.

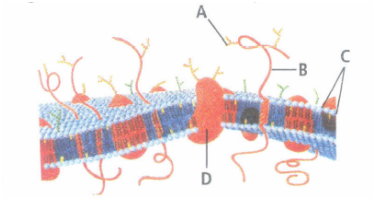
101. Which of the following are not membrane-bound?
a) Ribosomes b) Lysosomes c) Mesosomes d) Vacuoles

02. Cell recognition and adhesion occur due to biochemicals of cell membranes named _____ .
a) Proteins b) Lipids c) Both (a) and (b)
d) Glycoproteins and glycolipids

03. Vacuole in a plant cell :
a) Lacks membrane, contains water and excretory substances
b) Is membrane bound, contains water and excretory substances
c) Is membrane bound, contains storage proteins and lipids
d) Lacks membrane and contains air

04. Binding of specific protein on regulatory DNA sequence can be studied by means of _____ .
a) Ultra centrifugation b) Electron microscope c) Light microscope
d) X-rays crystallography

05. Identify the components labelled as A, B, C and D in the given figure of cell membrane from the list (i) to (vii) given along with and select the correct option.



Components:
(i) Sugar
(ii) Protein
(iii) Lipid bilayer
(iv) Integral protein
(v) Cytoplasm
(vi) Cell wall
(vii) External protein
The correct matching of components is
a) A-(i), B-(ii), C-(iii), D-(iv) b) A-(ii), B-(i), C-(iii), D-(iv)
c) A-(i), B-(ii), C-(iii), D-(vi) d) A-(i), B-(ii), C-(iil), D-(vii)

06. A scientist wanted to genetically engineer a new type of corn plant that could withstand cold temperatures. He decided to try to change the composition of the plant's membrane to lower the temperature of phase

transition. Which of the following membrane changes might be expected to improve the cold tolerance of the plants?

a) Increasing the length of the fatty acyl chains.

b) Eliminating all steroids.

c) Increasing the frequency of unsaturated fatty acyl chains.

d) Decreasing the frequency of unsaturated fatty acyl chains.

107. Microtubule is involved in the _____ .

a) Cell division b) Membrane architecture c) Muscle contraction

d) DNA recognition

108. Select one which is not true for ribosomes.

a) Made of two subunits b) Form polysome c) May attach to mRNA

d) Have no role in protein synthesis

109. Middle lamella is composed mainly of:

a) Muramic acid b) Calcium pectate c) Phosphoglycerides

d) Hemicellulose

110. Mitotic spindle is mainly composed of which protein?

a) Actin b) Myosin c) Tubulin d) Myoglobin

111. The function of the gap junction is to _____ .

a)

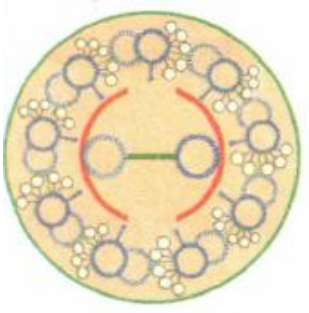
Facilitate communication between adjoining cells by connecting the cytoplasm for rapid transfer of ions, small molecules and some large molecules.

b) Separate two cells from each other.

c) Stop substance from leading across a tissue

d) Performing cementing to keep neighbour-ing cells together

112. Which of the following is correct for the given structure?



a) These are small structures which work like oars

b) It is covered with plasma membrane. c) Its core is called axoneme

d) All of these

13. Lysosomes are _____ vesicular structures formed by the process of packaging in the _____ .
    a) membrane bound, Golgi apparatus
    b) non-membrane bound, Golgi apparatus c) membrane bound, ER
    d) non-membrane bound, ER
14. Assertion: The quasifluid nature of lipid enables lateral movement of proteins within the overall bilayer.
    Reason: This ability to move within the membrane is called fluidity and is important for cell growth.
    a)
    If both assertion and reason are true and reason is the correct explanation of assertion.
    b)
    If both assertion and reason are true but reason is not the correct explanation of assertion.
    c) If assertion is true but reason is false.
    d) If both assertion and reason are false.
15. _____is directly connected to the outer nuclearis directly connected to the outer nuclear
    a) Mitochondria b) Golgi body c) ER d) Chloroplast
16. Packing of substances for export from the cell occurs in the
    a) SER b) Golgi bodies c) lysosome d) nucleolus.
17. The main organelle involved in modification and routing of newly synthesised proteins to their destinations is _____ .
    a) Chloroplast b) Mitochondria c) Lysosome
    d) Endoplasmic reticulum
18. Magnification of compound microscope is not connected with _____ .
    a) Numerical aperture b) Focal length of objective
    c) Focal length of eye piece d) Tube length
19. Which one of these statements is incorrect?

a)
Glycolysis operates as long as it is supplied with NAD that can pick up hydrogen atoms.
b) Glycolysis occurs in cytosol.
c) Enzymes of TCA cycle are present in mitochondrial matrix.
d)
Oxidative phosphorylation takes place in outer mitochondrial membrane.

20. Assertion : Ribosomes are non-membrane bound organells found only in the procaryotic cells
Reason: Ribosomes are present only in the cytoplasm
a)
If both assertion and reason are true and reason is the correct explanation of assertion
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false
d) If both assertion and reason are false

21. Select the incorrect match:
a) Submetacentric Lshaped --Chromosomes chromosomes
b) Allosomes-- Sex chromosomes c) Lampbrush --Diplotene bivalents
d) Polytene-- Oocytes of amphibians Chromosomes

22. Golgi apparatus is absent in _____ .
a) Higher plants b) Yeast c) Bacteria and blue-green algae
d) None of the above

23. Who proposed a modification in the cell theory?
a) Schleiden and Schwann b) Rudolf Virchow c) Robert Hooke
d) Marcello Malpighi

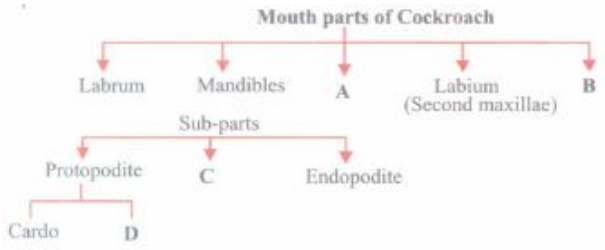
24. What are those structures that appear as beads-on-string in the chromosomes when viewed under electron microscope?
a) Genes b) Nucleotides c) Nucleosomes d) Base pairs

25. The Golgi complex participates in :
a) Respiration in bacteria b) Formation of secretory vesicles
c) Fatty acid breakdown d) Activation of amino acid

26. 'Omnis cellula-e cellula' i.e., new cells arise from preexisting cells; this statement was given by:
a) Schleiden and Schwann b) Rudolf Virchow c) Robert Brown
d) Robert Hooke

27. Membranous bag with hydrolytic enzymes which is used for controlling intracellular digestion of macromolecules is _____ .
a) Endoplasmic reticulum b) Nucleosome c) Lysosome
d) Phagosome

28. Complete the following flowchart by selecting the correct option.



a)

A	B	C	D
Stipes	Hypopharynx	Exopodite	First maxillae

b)

A	B	C	D
Stipes	Exopodite	Hypopharynx	First maxillae

c)

A	B	C	D
First maxillae	Hypopharynx	Exopodite	Stipes

d)

A	B	C	D
First maxillae	Exopodite	Hypopharynx	Stipes

29. Read the given statements and select the correct option.
Statement 1 : Peroxisomes are involved in photorespiration of the plant cells and help in the lipid metabolism of animal cells.
Statement 2: They are the cells' garbage disposal system.

a) Both statements 1 and 2 are correct
b) Statement 1 is correct but statement 2 is incorrect
c) Statement 1 is incorrect but statement 2 is correct
d) Both statements 1 and 2 are incorrect.

30. Read the given statements regarding a cell organelle.
(i) It contains water, sap, excretory products and other unwanted materials.
(ii) It is bounded by a single membrane called tonoplast.
(iii) In plant celis, it can occupy upto 90% of cellular volume.
(iv) Its contents form cell sap.
(v) It maintains turgor pressure.
The above features are attributed to
a) lysosome b) vacuole c) peroxisome d) mitochondrion.

31. Which structures perform the function of mitochondria in bacteria?
a) Mesosomes b) Nucleoid c) Ribosomes d) Cell wall

32. A cell organelle containing hydrolytic enzyme is :
a) Mesosome b) Lysosome c) Microsome d) Ribosome

33. Glycocalyx (mucilage sheath) of a bacterial cell may occur in the form of a loose sheath called_____or it may be thick and tough called _____
a) capsule, slime layer b) slime layer, capsule c) mesosome, capsule
d) mesosome, slime layer

34. What is a tonoplast?
a) Outer membrane of mitochondria b) Inner membrane of chloroplast
c) Membrane boundry of the vacuole of plant cells
d) Cell membrane of a plant cell

35. Plasma membrane consist mainly of :
a) Protein embedded in a phospholipid bilayer
b) Protein embedded in a polymer of glucose molecules
c) Proteins embedded in a carbohydrate bilayer
d) Phospholipids embedded in protein bilayer

36. Which of the following statements is not correct?
a) The hydrolytic enzymes of lysosomes are active under acidic pH.
b) Lysosomes are membrane bound structures.

c)
Lysosomes are formed by the process of packaging in the endoplasmic reticulum.
d) Lysosomes have numerous hydrolytic enzymes.

37. The most likely method, used to determine the structural details of a cell organelle is
a) autoradiography b) microdissection c) electron microscopy
d) phase contrast microscopy.

38. The chromosomes in which centromere is situated close to one and are:
a) Sub-metacentric b) Metacentric c) Acrocentric d) Telocentric

39. Organelle having flattened membrane bound cisternae and lying near the nucleus is _____ .
a) Golgi apparatus b) Mitochondrion c) Centriole d) Nucleolus

40. Fluid mosaic model of cell membrane was put forward by _____ .
a) Danielli and Davson b) Singer and Nicolson c) Gamer and Allard
d) Watson and Crick

41. An outer covering membrane is absent over _____ .
a) Nucleolus b) Lysosome c) Mitochondrion d) Plastids

42. Choosethe incorrect statement regarding cell membrane.
a)
Generally smaller molecules pass easily and readily than large molecules.
b)
Water soluble substance pass through it less readily than lipid soluble substances.
c) In addition to phospholipid membrane it also contains cholesterol.
d) None of these

43. A common characteristic feature of plant sieve tube cells and most of mammalian erythrocytes is
a) absence of mitochondria b) presence of cell wall
c) presence of haemoglobin d) absence of nucleus.

44. Integral cell membrane proteins

a) are partially embedded in lipid layers
b) are completely embedded in lipid layers
c) show lateral but not vertical movements within bilayer of lipid
d) all of these.

45. The important site for the formation of glycoproteins and glycolipids is :
a) Vacuoles b) Plastids c) Lysosome d) Golgi apparatus

46. Ribosomes are composed of
a) RNA only b) Proteins only c) RNA and proteins
d) RNA, proteins and DNA

47. Which of the following features iscommon to prokaryotes and many eukaryotes?
a) Chromatin material present b) Cell wall present
c) Nuclear membrane present
d) Membrane-bound subcellular organelles present

48. Which ofthe following cell organelles is responsible for extracting energy from carbohydrates to form ATP?
a) Lysosome b) Ribosome c) Chloroplast d) Mitochondrion

49. Match column I with column II and select the correct option from the codes given below.

	Column I		**Column II**
A.	RER	(i)	Intracellular and extracellular digestion
B.	SER	(ii)	Lipid Synthesis
C.	Golgi complex	(iii)	Protein synthesis and secretion
D.	Lysosomes	(iv)	Moves materials out of the cell

a) A-(iii), B-(ii), C-Iiv), D-(i) b) A-(ii), B-(iii),C-(iv), D-(i)
c) A-(i), B-(iii),C -(ii), D-(iv) d) A-(iv), B-(ii), C-(iii), D-(i)

50. Which one of the following cell organelles is enclosed by a single membrane?
a) Nucleus b) Mitochondria c) Chloroplasts d) Lysosomes

51. Assertion: Rudolf Virchow modified the hypothesis of cell theory given by Schleiden and Schwann.
Reason: Cell theory says that all cells arise from pre-existing cells.

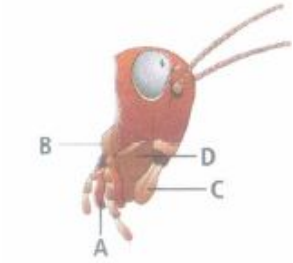
a)
If both assertion and reason are true and reason is the correct explanation of assertion
b)
If both assertion and reason are true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false
d) If both assertion and reason are false.

52. Which is correct about cell theory in view of current status of our knowledge about cell structure?
a)
It needs modification due to discovery of subcellular structures like chloroplasts and mitochondria
b)
Modified cell theory means that all living beings are composed of cells capable of reproducing
c)
Cell theory does not hold good because all living beings do not have cellular organisation (e.g. viruses)
d)
Cell theory means that all living objects consist of cells whether or not capable of reproducing

53. Many molecules can move briefly across the membrane without any requirement of energy and special membrane proteins. This is called _____
a) active transport b) passive transport c) facilitated diffusion
d) all of these

54. Select the incorrect statement regarding the plasma membrane.
a) Ratio of proteins and lipids varies considerably in different cell types.
b)
52% proteins and 40% lipids constitute the membrane of human RBC.
c) Arrangement of proteins (P) and Lipids (L) is L-P-P-L.
d) Head of lipid is hydrophilic.

55. The given figure represents head region of cockroach. In which one of the options all the four parts A. B, C, and D are labelled correctly?



a)

A	B	C	D
Labrum	Mandible	Maxilla	Labium

b)

A	B	C	D
Mandible	Maxilla	Labium	Labrum

c)

A	B	C	D
Maxilla	Labium	Mandible	Labrum

d)

A	B	C	D
Labium	Maxilla	Labrum	Mandible

56. The core of a cilium or flagellum composed of microtubules and their associated proteins is called
a) blepharoplast b) axoneme c) microfilament d) tubulin

57. Which of the following is correct for the origin of lysosome (L)?
a) ER --7 Golgi bodies --7 L b) Golgi bodies --7 ER --7 L
c) Nucleus --7 Golgi bodies --7 L
d) Mitochondria --7 ER --7 Goigi bodies --7 L

58. Which one of the following structures between two adjacent cells is an effective transport pathway?
a) Plasmodesmata b) Plastoquinones c) Endoplasmic reticulum
d) Plasmalemma

59. Select the correct matching in the following pairs:
a) Smooth ER - Synthesis of lipids
b) Rough ER - Synthesis of glycogen
c) Rough ER - Oxidation of fatty acids
d) Smooth ER-Oxidation of phospholipids

60. Select the option which arranges the following steps in a correct sequence as per Gram's staining technique: Treatment with 0.5% iodine solution (1), washing with water (2), treatment with absolute alcohol/acetone (3), staining with weak alkaline solution of crystal violet (4).

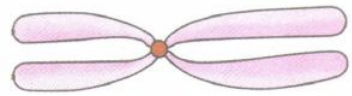
a) 4⟶1⟶2⟶3 b) 3⟶2⟶1⟶4 c) 3 ⟶ 1 ⟶ 2 ⟶ 4
d) 4 ⟶ 2 ⟶ 3 ⟶ 1

61. Which of the following organ has single membrane?
a) Nucleus b) Cell wall c) Mitochondria d) Spherosomes

62. Cell organelles having hydrolases/digestive enzymes are _____ .
a) Peroxisomes b) Lysosomes c) Ribosomes d) Mesosomes

63. Which of the following statements is incorrect?
a)
Mitochondria, unless specifically stained are not easily visible under the microscope.
b)
Physiological activity of cells determines the number of mitochondria per cell.
c)
Mitochondrion, a power house of cell has DNA. RNA, ribosomes and enzymes, so it can survive outside the cell.
d) Mitochondria divide by fission.

64. Which of the following is correct regarding the given figure



a)

No. of centromere	No. of kinetochore	No. of arms
1	2	2

b)

No. of centromere	No. of kinetochore	No. of arms
2	1	4

c)

No. of centromere	No. of kinetochore	No. of arms
1	2	4

d)

No. of centromere	No. of kinetochore	No. of arms
2	1	4

65. Which of the following statements regarding mitochondria is incorrect?
a) Enzymes of electron transport are embedded in outer membrane.
b) Inner membrane is convoluted with infoldings.
c)
Mitochondrial matrix contains single circular DNA molecule and ribosomes.
d)
Outer membrane is permeable to monomers of carbohydrates, fats and proteins.

66. Which organelle helps in the synthesis of lipids, cholesterol, steroids and visual pigments in epithelial cells of retina?
a) Golgi bodies b) RER c) SER d) Mitochondria

67. An elaborate network of filamentous proteinaceous structures present in the cytoplasm which helps in the maintenance of cells shape is called:
a) Thylakoid b) Endoplasmic reticulum c) Plasmalemma
d) Cytoskeleton

68. Protein synthesis in an animal cell takes place _____ .
a) Only in cytoplasm b) In the nucleolus as well as in the cltoplasm
c) In the cytoplasm as well as in mitochondria
d) Only on ribosomes attached to nucleus

69. Which one is the mis-matched pair?
a) Largest isolated - Egg of an ostrich single cell
b) Golgi apparatus - Discovered by Altman
c) Mitochondria - Name was given by Benda
d) Lysosomes - Discovered by de Duve

70. Arrangement of microtubules in a flagellum and a centriole is respectively

a) 9 +2 and 9 + 1 b) 9 + 1 and 9 + 0 c) 9 + 0 and 9 + 2
d) 9 + 2 and 9 + O.

171. Which of the following observations most strongly support the view that mitochondria contain electron transport enzymes aggregated into compact association?
a) Mitochondria have a highly folded inner wall.
b)
Disruption of mitochondria yields membrane fragments, which are able to synthesise ATP.
c)
A contractile protein capable of utilising ATP has been obtained from mitochondria.
d)
Mitochondria in animal embryos have a tendency to concentrate in cells, which are to become locomotory structures.

172. Cell recognition and adhesion are facilitated by components of plasma membrane. These components are generally
a) protein molecules alone b) lipids alone c) both lipids and proteins
d) glycolipids and glycoproteins

173. Nuclear mebrane is absent in _____ .
a) Penicillium b) Agaricus c) Volvox d) Nostoc

174. Which of the following pair of organelles does not contain DNA?
a) Chloroplasr and Vacuoles b) Lysosomes and Vacuoles
c) Nuclear envelope and Mitochondria d) Mitochondria and Lysosomes

175. Which is the best way to separate intact chloroplast from green leaves of angiospermic plant?
a) Petrol-ether b) Chloroform c) 10% sucrose solution d) Alcohol

176. Continuity of cytoplasm from cell to cell is maintained through cytoplasmic connections in plants called
a) ER b) tight junction c) gap junction d) plasmodesmata

177. Assertion: Cells vary greatly in their shape
Reason: The shape of cell does not depend on the function they perform.

a)
If both assertion and reason are true and reason is the correct explanation of assertion

b)
If both assertion and reason are true but reason is not the correct explanation of assertion.

c) If assertion is true but reason is false

d) If both assertion and reason are false.