

UNIT – III – CELL BIOLOGY AND BIOMOLECULES

CHAPTER - 6

CELL: THE UNIT OF LIFE

TRY AND TEST YOURSELF



LEVEL – I (1 - 50 Questions)

1. The two subunits of ribosomes remain united at critical ion level of
 a) Magnesium b) Calcium c) Sodium d) Ferrous
2. Sequences of which of the following is used to know the phylogeny?
 a) mRNA b) rRNA c) tRNA d) Hn RNA
3. Many cells function properly and divide mitotically even though they do not have
 a) Plasma membrane b) cytoskeleton c) mitochondria d) Plastids
4. Keeping in view the fluid mosaic model for the structure of cell membrane, which one of the following statements is correct with respect to the movement of lipids and proteins from one lipid monolayer to the other
 a) Neither lipid nor proteins can flip-flop b) Both lipid and proteins can flip flop
 c) While lipids can rarely flip-flop proteins cannot d) While proteins can flip-flop lipids cannot
5. Match the columns and identify the correct option.

Column-I	Column-II
A) Thylakoids	(i) Disc-shaped sacs in Golgi apparatus
B) Cristae	(ii) Condensed structure of DNA
C) Cisternae	(iii) Flat membranous sacs in stroma
D) Chromatin	(iv) Infoldings in mitochondria

- a) A-(i), B-(ii), C-(iii), D-(iv) b) A-(iii), B-(iv), C-(i), D-(ii)
- c) A-(ii), B-(iii), C-(i), D-(iv) d) A-(iv), B-(i), C-(iii), D-(ii)
6. The word “cell” was first used by ____ in 1662 therefore the term ‘cell’ is as old as 300 years.
 a) Robert hook b) Aristotle c) Robert Brown d) Antonie Von Leeuwenhock
7. According to Robert Hook, cells are “_____ with a great little boxes” from the cork tissues
 a) Liquid comb b) Sap comb c) Honey comb d) Gel comb
8. Robert Brown described the spherical body in the plant cell is _____.
 a) Mitochondria b) Nucleus c) Lysosome d) Ribosome
9. Rudolf Virchow in 1858 explained the _____ theory by adding a feature stating that all living cells arise from pre-existing living cells by ‘cell division’.
 a) Tissue b) Organ c) Organ system d) Cell
10. The common light microscope which has _____ lenses are called as compound microscope.
 a) Two b) Three c) Many d) One
11. The lenses closer to the object is called
 a) Eye piece b) Objective lens c) Light lens d) Heavy lens
12. Phase plate is a ____ component with circular annular etching in Phase contrast microscope.
 a) Square b) Spherical c) Circular d) Round

13. A special effect in an ordinary microscope is brought about by means of a special component called 'Patch Stop Carrier'. It is used in ____
- a) Simple Microscope b) Compound Microscope
c) Bright field Microscope d) Dark Field Microscope
14. Electron Microscope was first introduced by _____ in 1931.
- a) G Binning b) H Roher c) Robert Brown d) Ernest Ruska
15. The chemicals used in Electron Microscope
- a) Gold b) Palladium c) Both of them d) None of them
16. With the help of TEM, We can study the detailed structure of
- a) Viruses b) Mycoplasma c) Cellular organelles d) All of them
17. Exception of Cell theory
- a) Viruses b) Viroids c) Prions d) All of them
18. These are the dead cells
- a) Tracheids b) Vessels c) Both of them d) Parenchyma
19. The horny cells (dead cells) are seen in
- a) Plants b) Fungus c) Bacteria d) Animals
20. Who observed a living juice in animal cell and called it "Sarcodes"?
- a) Corti b) Purkinje c) Robert Hooke d) Felix Dujardin
21. Match the following and identify the correct option.

Column-I	Column-II
A) Purkinje	i) Protoplasm is a "physical basis of life"
B) Hugo Van Mohl	ii) "Protoplasm Theory"
C) Max Schultze	iii) the word "protoplasm"
D) O. Hertwig & Huxley	iv) Importance of protoplasm.

- a) A-(iii), B-(iv), C-(ii), D-(i) b) A-(ii), B-(iii), C-(iv), D-(i)
c) A-(iv), B-(i), C-(iii), D-(ii) d) A-(i), B-(ii), C-(iii), D-(iv)
22. Protoplasm is a complex colloidal system which was suggested by
- a) Fisher b) Hardy c) Both of them d) None of them
23. The colloidal protoplasm which is in gel form can change into sol form by
- a) Solation b) Gelation c) Both of them d) None of them
24. Protoplasm is translucent, _____ and polyphasic fluid)
- a) odourful b) odourless c) colourful d) None of them
25. The prime basis for mechanical behaviour of cytoplasm.
- a) Solation b) Gelation c) Gel-sol conditions d) jelly-like
26. The movement seen in protoplasm
- a) Brownian movement b) amoeboid movement
c) cyclosis d) All of them
27. Around 34 elements are present in protoplasm but only __ elements are main/universal elements.
- a) 11 b) 12 c) 13 d) 16
28. Group of tissue join together to perform similar function called
- a) tissue system b) Cells c) Organism d) Organ
29. Group of _____ with related function called organ system, organ system coordinating together to form an organism.
- a) tissue b) tissue system c) Organ d) Organ system

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30. Round and rectangular cells are seen in
a) Virus b) Fungi c) Plants d) Bacteria
31. The DNA lies in the Prokaryotes is called
a) 'nucleoid' b) 'nucleus' c) 'nuclear membrane' d) 'nucleolus'
32. In Rickettsiae and Spirochaetae, the DNA is without _____ proteins.
a) Albumin b) Globulin c) Histone d) Fibrinogen
33. The organisms which have true nucleus are called
a) Prokaryotes b) Mesokaryotes c) Both of them d) Eukaryotes
34. The first cell might have evolved approximately _____ billion years ago.
a) 3.6 b) 3.7 c) 3.8 d) 3.9
35. The primitive cell would have been similar to present day _____.
a) Protista b) Monera c) Plantae d) Animalia
36. Find out the correct option in the match the following.
a) Large cell - Bacteria b) Chloroplast absent - Animal cell
c) Binary fission - Eukaryotes d) Fungi - Prokaryotes
37. Cell Wall was first observed by
a) Purkinje b) Bridges c) Robert Hooke d) Huxley
38. In Fungi the cell wall is composed of
a) peptidoglycan b) chitin c) suberin d) cellulose
39. The main component of plant cell wall
a) Galactans b) Cutin c) Suberin d) Cellulose
40. _____ binds the microfibrils with matrix and glycoproteins control the orientation of microfibrils while pectin serves as filling material of the matrix.
a) Cellulose b) Silica c) Hemicellulose d) Chitin
41. Cells such as parenchyma and meristems have only primary wall.
a) Xylem b) Phloem c) Fibre d) Meristem
42. The _____ wall is divided into three sub layers termed as S1, S2 and S3.
a) Primary wall b) Secondary wall c) Middle lamellae d) Lateral lamellae
43. At few regions the _____ wall layer is laid unevenly whereas the primary wall and middle lamellae are laid continuously such regions are called pits.
a) Plasmodesmata b) Middle lamellae c) Primary wall d) Secondary wall
44. How many pits are present in the cell wall?
a) One b) Two c) Three d) Many
45. The cell membrane (or) plasma membrane is also called
a) cell surface b) Tissue surface c) Organ surface d) Organelle surface
46. The movement of membrane lipids from one side of the membrane to the other side by vertical movement is called
a) Flip flopping b) Flip flop c) Both of them d) None of them
47. The Channel and carrier of cell membrane
a) Lipid b) Protein c) Carbohydrate d) Water
48. There are processes in which a cell can transport a large quantity of solids and liquids out of cell is called
a) Endocytosis b) Phagocytosis c) Pinocytosis d) Exocytosis
49. Plants, fungi and animal cell use nitric oxide as one of the many signalling molecules.
a) Sulphur dioxide b) Potassium c) Nitric oxide d) Calcium
50. The molecular soup of the cell
a) Cell wall b) Chloroplast c) Ribosome d) Cytoplasm
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LEVEL – II (51 – 100 Questions)

51. When ribosomes are present in the outer surface of the membrane it is called as
a) RER b) SER c) Both of them d) None of them
52. In Plants the Golgi body are found as smaller vesicles termed as
a) Peroxisomes b) Microbodies c) Dictyosomes d) Glyoxysomes
53. The inner membrane of Mitochondria is convoluted called
a) matrix b) Crista c) Vesicle d) Cisternae
54. _____ are called “Power house of a cell”, as they produce energy rich ATP.
a) Golgi body b) Chloroplast c) Plasma membrane d) Mitochondria
55. Mitochondria is called semi-autonomous organelle, because of the presence of
a) Nucleus b) RNA c) DNA d) 70S Ribosome
56. Coloured Plastids are called
a) Chromoplast b) Leucoplast c) Amyloplast d) Elaioplast
57. According to Schimper, different kind of plastids can transform into one another.
a) Kolliker b) Altman c) Later Benda d) A.F.U. Schimper
58. The stroma of Chloroplast contains flat interconnected sacs called
a) matrix b) Thylakoid c) Grana d) Genome
59. The thylakoid contains quantosomes, they are small, rounded _____ units.
a) Transpiratory b) Respiratory c) Photosynthetic d) Growing
60. Chloroplast contain circular DNA, but it does not have
a) Histone proteins b) Albumin proteins c) Phospholipid d) Glycolipid
61. Ribosomes were first observed by _____ as dense particles or granules in the electron microscope at 1953.
a) George Bentham b) George Bernard c) George Palade d) George
62. Ribosome is not a _____ bound organelle
a) Cell wall b) Plasma layer c) Middle lamellae d) Membrane
63. 80S Ribosomes (Subunits 40S and 60S) are seen in
a) Plants b) Eukaryotic cells c) Bacteria d) Blue green algae
64. Suicidal Bags of the Cell
a) Lysosomes b) Ribosomes c) Glyoxysomes d) Peroxisomes
65. Peroxisomes takes part in
a) Photorespiration b) Dark respiration c) Krebs’s cycle d) Photosynthesis
66. The germinating seeds of Castor seed cells contain
a) Sphaerosomes b) Centrioles c) Glyoxysomes d) Microbodies
67. Sphaerosomes helps in storage of _____ in the endosperm cells of oil seeds.
a) Protein b) amino acid c) Glucose d) Fat
68. The central part of the _____ is called hub.
a) Vacuole b) Nucleus c) Nucleoplasm d) Centriole
69. The centriole form the basal body of cilia or flagella and spindle fibers in _____ cells.
a) Algae b) Fungi c) Flowering plants d) Animal
70. Vacuoles store, most of the _____ of the cell.
a) Glucose b) Sucrose c) Fructose d) Starch
71. Metachromatic granules are seen in
a) Virus b) Algae c) Bacteria d) Fungus

72. Nuclear space is filled with _____, a gelatinous matrix has uncondensed chromatin network and a conspicuous nucleoli.
a) Cytoplasm b) Periplasm c) Protoplasm d) Nucleoplasm
73. The chromosomes are composed of thread like strands called
a) Chromatin b) Gene c) DNA d) RNA
74. When the chromatids are identical they are called _____ chromatids.
a) brother chromatids b) Sister chromatids
c) non-sister chromatids d) non-brother chromatids
75. The primary constriction of chromosome is made up of
a) centromere b) kinetochore c) Both of them d) None of them
76. Point centromere, Regional centromere and Holocentromere are seen in
a) Prokaryotes b) Mesokaryotes c) Eukaryotes d) Virus
77. Polytene chromosomes observed in the salivary glands of *Drosophila* by _____ in 1881.
a) Palade b) Bentham c) C.G. Balbiani d) Aristotle
78. Flemming in 1882, observed _____ chromosomes.
a) Polytene b) Lampbrush c) Special d) Specific
79. Lampbrush chromosomes seen in giant nucleus of the unicellular alga _____ and oocytes of an animal _____.
a) *Acetabularia* and Salamandar b) *Acetabularia* and Frog
c) *Chlorella* and Salamandar d) *Chlorella* and Frog
80. Janus Green is a stain (the greenish blue colour) which gives colour to
a) Starch b) Nucleus c) Mitochondria d) Protein
81. In Eukaryotic Flagella are made up of microtubules and proteins called _____ and nexin and the movement is driven by ATP.
a) Dynein b) fibrils c) micro fibrils d) Protein

NEET BASED QUESTIONS:

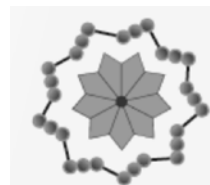
82. Who invented electron microscope? (2010 AIIMS, 2008 JIPMER)
a) Janssen b) Edison c) Knoll and Ruska d) Landsteiner
83. _____ is responsible for the flow of materials and information into the cell (2009 AIIMS)
a) Membrane receptors b) carrier proteins c) integral proteins d) none of these
84. *Omnis-cellula-e-cellula* was given by (2007 AIIMS)
a) Virchow b) Hooke c) Leeuwenhoek d) Robert Brown
85. Which of the following is responsible for the mechanical support, protein synthesis and enzyme transport (2007 AIIMS)
a) cell membrane b) mitochondria c) dictyosomes d) endoplasmic reticulum
86. Genes present in the cytoplasm of eukaryotic cells are found in (2006 AIIMS)
a) mitochondria and inherited via egg cytoplasm
b) lysosomes and peroxisomes
c) Golgi bodies and smooth endoplasmic reticulum
d) Plastids inherited via male gametes
87. In which one the following would you expect to find glyoxysomes (2005 AIIMS)
a) Endosperm of wheat b) endosperm of castor
c) Palisade cells in leaf d) Root hairs

88. A quantosome is present in (JIPMER 2012)
a) Mitochondria b) Chloroplast c) Golgi bodies d) ER
89. In mitochondria the enzyme cytochrome oxidase is present in (2012 JIPMER)
a) Outer mitochondrial membrane b) inner mitochondrial membrane
c) Stroma d) Grana
90. Which organelle is present in higher number in secretory cell? (2008 JIPMER)
a) Mitochondria b) Chloroplast c) Nucleus d) Dictyosomes
91. Major site for the synthesis of lipids (2013 NEET)
a) Rough ER b) smooth ER c) Centriole d) Lysosome
92. Golgi complex plays a major role in. (2013 NEET)
a) post translational modification of proteins and glycosidation of lipids
b) translation of proteins
c) Transcription of proteins
d) Synthesis of lipid
93. Main arena of various types of activities of a cell is (2010 AIPMT)
a) Nucleus b) Mitochondria c) Cytoplasm d) Chloroplast
94. The thylakoids in chloroplast are arranged in (2005 JIPMER)
a) regular rings b) linear array c) diagonal direction d) stacked discs
95. Sequences of which of the following is used to know the phylogeny rRNA (2002JIPMER)
a) mRNA b) rRNA c) tRNA d) Hn RNA
96. Structures between two adjacent cells which is an effective transport pathway- (2010 AIPMT)
a) Plasmodesmata b) Middle lamella c) Secondary wall layer d) Primary wall layer
97. In active transport carrier proteins are used, which use energy in the form of ATP to
a) transport molecules against concentration gradient of cell wall
b) transport molecules along concentration gradient of cell membrane
c) transport molecules against concentration gradient of cell membrane
d) transport molecules along concentration gradient of cell wall
98. The main organelle involved in modification and routing of newly synthesised protein to their destinations is (AIPMT 2005)
a) Mitochondria b) Glyoxysomes c) Spherosomes d) Endoplasmic reticulum
99. Algae have cell wall made up of (AIPMT2010)
a) Cellulose, galactans and mannans b) Cellulose, chitin and glucan
c) Cellulose, Mannan and peptidoglycan d) Muramic acid and galactans

Picture Based Question

100. Identify the given picture.

- a) Cross section of centriole
b) Cross section of mitochondria
c) Cross section of ribosome
d) Cross section of chloroplast



UNIT – III – CELL BIOLOGY AND BIOMOLECULES

CHAPTER - 7 CELL CYCLE

TRY AND TEST YOURSELF



LEVEL – I (1 - 42 Questions)

1. The correct sequence in cell cycle is
 a) S-M-G₁-G₂ b) S-G₁-G₂ -M c) G₁-S-G₂ -M d) M-G₁-G₂ -S
2. If mitotic division is restricted in G₁ phase of the cell cycle then the condition is known as
 a) S Phase b) G₂ Phase c) M Phase d) G₀ Phase
3. Anaphase promoting complex APC is a protein degradation machinery necessary for proper mitosis of animal cells. If APC is defective in human cell, which of the following is expected to occur?
 a) Chromosomes will be fragmented b) Chromosomes will not condense
 c) Chromosomes will not segregate d) Recombination of chromosomes will occur
4. In S phase of the cell cycle
 a) Amount of DNA doubles in each cell b) Amount of DNA remains same in each cell
 c) Chromosome number is increased d) Amount of DNA is reduced to half in each cell
5. Centromere is required for
 a) transcription b) crossing over
 c) Cytoplasmic cleavage d) movement of chromosome towards pole
6. Synapsis occur between
 a) mRNA and ribosomes b) spindle fibres and centromeres
 c) two homologous chromosomes d) a male and a female gamete
7. In meiosis crossing over is initiated at
 a) Diplotene b) Pachytene c) Leptotene d) Zygotene
8. Colchicine prevents the mitosis of the cells at which of the following stage
 a) Anaphase b) Metaphase c) Prophase d) interphase
9. The pairing of homologous chromosomes on meiosis is known as
 a) Bivalent b) Synapsis c) Disjunction d) Synergids
10. Anastral mitosis is the characteristic feature of
 a) Lower animals b) Higher animals c) Higher plants d) All living organisms
11. In 1873 _____ described chromosomes (Nuclear filaments) for the first time.
 a) Robert Hooke b) Robert Brown c) Anton Schneider d) Walther Flemming
12. Robert Brown discovered the presence of nucleus in cells of _____ roots
 a) Banyan b) Orchid c) Neem d) Nerium
13. In 1882 Walther Flemming coined the word _____ and Chromosome behavior.
 a) Mitosis b) AMitosis c) Meiosis d) Binary fission
14. Who proposed Chromosome theory in 1888?
 a) Schleiden b) Schwans c) Theodor Boveri d) Beneden
15. The long, thin, lengthy structured chromosome contains a short, constricted region called
 a) Chromatin b) DNA c) RNA d) Centromere

16. The mouse has _____ Chromosomes
 a) 40 b) 42 c) 44 d) 46
17. The Onion has _____ Chromosomes
 a) 10 b) 14 c) 16 d) 18
18. The haploid Chromosome of human being
 a) 20 b) 21 c) 22 d) 23
19. The diploid (2n) chromosome of human being
 a) 42 b) 44 c) 46 d) 48
20. Cell cycle was discovered by Prevost and _____ in 1824.
 a) Dumans b) Aristotle c) Rudolf Virchow d) Bridges
21. Match the following and identify the correct option.
 Cell cycle of a proliferating human cell

Column-I	Column-II
A) G ₁ stage	(i) 1 hour
B) S stage	(ii) 4 hours
C) G ₂ stage	(iii) 11 hours
D) M stage	(iv) 8 hours

- a) A-(i), B-(ii), C-(iii), D-(iv) b) A-(iv), B-(iii), C-(i), D-(ii)
 c) A-(iii), B-(ii), C-(iv), D-(i) d) A-(iii), B-(iv), C-(ii), D-(i)
22. G₁ Phase contain _____ amount of DNA in cells.
 a) 1C b) 2C c) 3C d) 4C
23. _____ act as major checkpoint which operates in G₁ to determine whether or not a cell divides
 a) Kinase b) Genes c) Cyclins d) Nucleus
24. Mature neuron and skeletal muscle cell remain permanently in _____.
 a) G₁ b) G₂ c) M d) G₀
25. DNA content increases from 2C to 4C in
 a) G₀ Phase b) S phase c) G₁ phase d) G₂ phase
26. _____ organize to form spindle fibres
 a) Tubulin b) Macrotubules c) Microtubules d) Centromere
27. Amitosis takes place in
 a) Cells of mammalian cartilage b) Macronucleus of Paramecium
 c) Old degenerating cells of higher plants d) All of them
28. Example of Closed mitosis
 a) Yeast b) Slime molds c) Many single celled Eukaryotes d) All of them
29. In _____ mitosis, the nuclear envelope breaks down and then reforms around the 2 sets of separated chromosome.
 a) Closed mitosis b) Open mitosis c) Both of them d) None of them
30. Asters are absent in
 a) Plant cell b) Animal cell c) Fungal cell d) Algal cell
31. Kinetochore is a _____ Protein complex present in the centromere.
 a) RNA b) mRNA c) DNA d) rRNA

32. Cytokinesis is a contractile process. This mechanism contained in contractile ring located inside the plasma membrane. The ring consists of a bundle of microfilaments assembled from actin and _____.
- a) myosin b) ATP c) RNA d) DNA
33. The first stage of cell wall construction is a line dividing the newly forming cells called ____.
- a) Cell membrane b) Cell plate c) Primary wall d) Secondary wall
34. Mitosis takes place in _____ reproduction.
- a) Sexual reproduction b) Spore mother cell c) Asexual reproduction d) None of them
35. Pairs of homologous chromosomes are called
- a) Monovalent b) Bivalent c) Trivalent d) Tetravalent
36. Each bivalent consists of two centromeres and _____ chromatids.
- a) 2 b) 3 c) 4 d) 5
37. The stage between the two meiotic divisions is called _____ which is short-lived)
- a) Intrakinesis b) Cytokinesis c) Karyokinesis d) Interkinesis
38. After Meiosis II four haploid daughter cells are formed, called _____.
- a) tetrads b) Bivalent c) Homologous d) Centromere
39. In Meiosis Crossing over takes place and exchange of _____ material leads to variations among species.
- a) Cytoplasmic b) Cell c) genetic d) None of them
40. Plant Mitogens include
- a) gibberellin b) ethylene c) Indole acetic acid d) All of them
41. Endomitosis occurs in the _____ glands of Drosophila and other flies.
- a) Liver b) Pancreas c) Salivary d) Stomach
42. This is found in animal cells. Aster and _____ are formed at each pole of the spindle during cell division. It is called Amphiastral.
- a) Centrioles b) Chromatin c) Nucleus d) None of them

UNIT – III – CELL BIOLOGY AND BIOMOLECULES

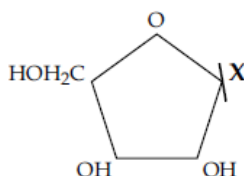
CHAPTER - 8 BIOMOLECULES

TRY AND TEST YOURSELF



LEVEL – I (1 - 55 Questions)

- The most basic amino acid is
 - Arginine
 - Histidine
 - Glycine
 - Glutamine
- An example of feedback inhibition is
 - Cyanide action on cytochrome
 - Sulpha drug on folic acid synthesiser bacteria
 - Allosteric inhibition of hexokinase by glucose-6-phosphate
 - The inhibition of succinic dehydrogenase by malonate
- Enzymes that catalyse interconversion of optical, geometrical or positional isomers are
 - Ligases
 - Lyases
 - Hydrolases
 - Isomerases
- Proteins perform many physiological functions. For example some functions as enzymes. One of the following represents an additional function that some proteins discharge.
 - Antibiotics
 - Pigment conferring colour to skin
 - Pigments making colours of flowers
 - Hormones
- Given below is the diagrammatic representation of one of the categories of small molecular weight organic compounds in the living tissues. Identify the category shown & one blank component “X” in it



	Category	Compound
(a)	Cholesterol	Guanine
(b)	Amino acid	NH ₂
(c)	Nucleotide	Adenine
(d)	Nucleoside	Uracil

- The cell components are made of collection of molecules called as cellular pool, which consists of both inorganic and organic compounds.
 - cellular pool
 - cellular pond
 - cellular point
 - cellular center
- _____ nutrients, which are required in larger amounts.
 - Micro
 - Macro
 - Both of them
 - None of them
- It is a macronutrient
 - Cobalt
 - zinc
 - boron
 - calcium
- ___ is required for activity of enzyme needed for synthesis of oligosaccharides and glycoproteins.
 - Magnesium
 - Sulphur
 - Manganese
 - Phosphate
- Molybdenum is necessary for fixation of _____ by enzyme nitrogenase.

Self-test the above questions. For answers you can purchase our 1 mark book.

-
- a) Nitrogen b) Oxygen c) Hydrogen d) Zinc
11. _____ % of water is present in total cellular mass.
a) 65% b) 68% c) 70% d) 75%
12. Water makes up 70% of human cell and upto _____ of mass of a plant cell.
a) 90 b) 92 c) 94 d) 95
13. Primary metabolites are those that are required for the basic metabolic processes like
a) Photosynthesis b) Respiration c) Protein and lipid metabolism d) All of them
14. Secondary metabolites does not show any direct function in ____ and development of organisms.
a) Growth b) Cell elongation c) Cell maturation d) Cell division
15. All macromolecules except _____ are formed by the process of polymerization.
a) Carbohydrates b) Lipids c) Proteins d) Nucleic acids
16. Glucose is a six carbon molecule and hence is called as_____
a) Pentose b) Triose c) Hexose d) Tetrose
17. Polysaccharide is an example of giant molecule, a _____ molecule and consists of only one type of monomer.
a) micro b) macro c) micron d) None of them
18. Amylose is a linear, unbranched _____ which makes up 80% of starch.
a) Monomer b) Trimer c) Polymer d) None of them
19. We test the presence of starch by adding a solution of iodine in _____ iodide.
a) Potassium b) Sodium c) Barium d) Calcium
20. The animal starch is _____.
a) Glucose b) Fructose c) Sucrose d) Glycogen
21. Glycogen is seen in liver cells, skeletal muscle fibre and throughout the human body except_____
a) Kidney b) Spleen c) Brain d) Intestine
22. Aldoses and ketoses are
a) Non-reducing sugars b) Reducing sugars c) Both of them d) None of them
23. The following polysaccharides act as an anticoagulant
a) Agar b) Heparin c) Inulin d) Keratan sulphate
24. The following are lipid
a) Triglycerides b) Phospholipids c) Waxes d) Steroids
e) All of them
25. Identify the unsaturated fatty acids
a) Palmitic acid b) Stearic acid c) Linoleic acid d) None of them
26. Fur, feathers, fruits, leaves, skin and insect exoskeleton are naturally waterproofed with a coating of _____.
a) Lipid b) Steroids c) Wax d) monomer
27. The term protein was coined by
a) Gerardus Johannes Mulder b) Hooke
c) Robert Brown d) Linus Pauling
28. There are about _____ different amino acids exist naturally.
a) 18 b) 19 c) 20 d) 22
29. The amino acid is both an acid and a base and is called
-

- a) amphoteric b) amphiteric c) amphibian d) amphiboly
30. _____ strings of amino acids linked by peptide bonds are called polypeptides.
a) Short b) Long c) Small d) Big
31. In 1953 _____ first sequenced the Insulin protein
a) Christian Anfinsen b) Kreb c) Robert Corey d) Fred Sanger
32. Linus Pauling and Robert Corey in 1951 proposed the α -helix and β sheet secondary structures of proteins. They were awarded Nobel Prize in _____.
a) 1950 b) 1952 c) 1954 d) 1956
33. The _____ structure is linear arrangement of amino acids in a polypeptide chain.
a) Primary b) Secondary c) Tertiary d) Quaternary
34. Enzymes serve as _____ for chemical reactions in cell and are non-specific.
a) acid b) base c) Catalyst d) helix
35. _____ are complex glycoproteins with specific regions of attachment for various organisms.
a) Antigen b) Epitope c) Paratope d) Antibodies
36. Agents such as soap, detergents, acid, alcohol and some disinfectants _____ the inter chain bond and cause the molecule to be non-functional.
a) helps b) joint c) soluble d) disrupt
37. The biuret test is used as an indicator of the presence of _____ because it gives a purple colour in the presence of peptide bonds.
a) Protein b) Vitamin c) Fat d) Carbohydrates
33. Building up of organic molecules - Synthesis of proteins from amino acids are called
a) Anabolic b) Catabolic c) Amphibolic d) None of them
34. The extracellular enzymes are
a) digestive enzymes b) Insulin c) Both of them d) None of them
35. Energy is required to raise molecules to this transition state and this minimum energy needed is called
a) Sun light energy b) Thermal energy c) Cool energy d) activation energy
36. The starting substance is the substrate. It is converted to the _____.
a) insoluble substance b) soluble substance c) product d) process
37. The _____ gas sarin blocks a neurotransmitter in synapse transmission.
a) bone b) Nerve c) Muscle d) nail
38. Match the following.

Column I	Column II
A) Holoenzyme	(i) FAD
B) Apoenzyme	(ii) NAD
C) Coenzyme	(iii) inactive enzyme
D) Prosthetic group	(iv) active enzyme

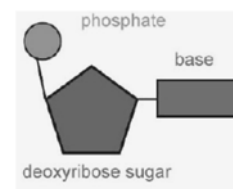
- a) A-(iv), B-(iii), C-(ii), D-(i) b) A-(ii), B-(iii), C-(i), D-(iv)
c) A-(iii), B-(ii), C-(iv), D-(i) d) A-(i), B-(ii), C-(iii), D-(iv)
39. Dehydrogenase is an example for
a) Transferase b) Oxidoreductase c) Hydrolases d) Isomerase
40. Digestive enzymes are

- a) Ligase b) Lyase c) Hydrolases d) Transferase
41. The following are responsible for a nucleoside.
a) purine or pyrimidine b) ribose or deoxyribose sugar
c) All of them d) None of them
42. When a _____ group is attached to a nucleoside it is called a nucleotide.
a) Sodium b) Potassium c) Phosphate d) Sulphur
43. Pyrimidines are
a) cytosine b) thymine c) uracil d) All of them
44. Erwin Chargaff in _____, a purine pairs with pyrimidine and vice versa.
a) 1946 b) 1947 c) 1948 d) 1949
45. In DNA, the narrow angle between the sugars generates a minor groove and the large angle on the other edge generates _____ groove.
a) micro b) Major c) ordinary d) Special
46. DNA helical structure has a diameter of _____.
a) 18 A° b) 19 A° c) 20 A° d) 22 A°
47. RNA is _____ stranded and is unstable when compared to DNA.
a) Single b) Double c) Triple d) Poly
48. Soluble RNA is otherwise known as
a) RNA b) mRNA c) tRNA d) rRNA
49. rRNA constitutes _____ of the total RNA.
a) 60% b) 65% c) 75% d) 80%
50. _____ for rRNA are highly conserved and employed for phylogenetic studies.
a) Nucleus b) Genes c) Chromosomes d) Cytoplasm
51. Each protein has a unique amino acid sequence which determines its _____ structure.
a) 1D b) 2D c) 3D d) 4D
52. tRNA _____ the code from mRNA and transfers amino acids to the ribosome to build proteins.
a) transist b) translucent c) transfers d) translates
53. Simple sugars are called as
a) monosaccharides b) Oligosaccharides c) Polysaccharides d) None of them
54. Most of the enzymes have a name based on their substrate with the ending _____.
a) -in b) -se c) -ase d) -es

Picture Based Questions

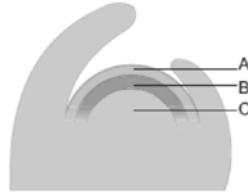
55. Identify the correct statement based on the given picture.

- a) It is the basic component of DNA
b) It is the basic component of RNA
c) Both of them
d) None of them



UNIT – IV – PLANT ANATOMY (STRUCTURAL ORGANISATION)**CHAPTER - 9
TISSUE AND TISSUE SYSTEM****TRY AND TEST YOURSELF****LEVEL – I (1 - 50 Questions)**

1. Refer to the given figure and select the correct statement.



- (i) A, B, and C are histogen of shoot apex (ii) A Gives rise to medullary rays.
(iii) B Gives rise to cortex (iv) C Gives rise to epidermis

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

2. Read the following sentences and identify the correctly matched sentences.

- (i) In exarch condition, the protoxylem lies outside of metaxylem.
(ii) In endarch condition, the protoxylem lie towards the centre.
(iii) In centarch condition, metaxylem lies in the middle of the protoxylem.
(iv) In mesarch condition, protoxylem lies in the middle of the metaxylem.

- a) (i), (ii) and (iii) only b) (ii), (iii) and (iv) only
c) (i), (ii) and iv only d) All of these

3. In Gymnosperms, the activity of sieve tubes are controlled by

- a) Nearby sieve tube members. b) Phloem parenchyma cells
c) Nucleus of companion cells. d) Nucleus of albuminous cells.

4. When a leaf trace extends from a vascular bundle in a dicot stem, what would be the arrangement of vascular tissues in the veins of the leaf?

- a) Xylem would be on top and the phloem on the bottom
b) Phloem would be on top and the xylem on the bottom
c) Xylem would encircle the phloem
d) Phloem would encircle the xylem

5. _____ coined the term Sieve tubes in 1837.

- a) Sanio b) Hartig c) Schleiden d) Nageli

6. Match the following and identify the correct option.

Column-I	Column-II
A) Apical Cell Theory	(i) Clowes
B) Histogen Theory	(ii) Hofmeister
C) Tunica Corpus Theory	(iii) Hanstein
D) Quiescent Centre Concept	(iv) Schmidt

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

7. Grafting is successful in dicots but not in monocots because the dicots have
a) Vascular bundles arranged in a ring b) Cambium for secondary growth
c) Vessels with elements arranged end to end d) Cork cambium
8. Which statement of the following is a correct statement?
(i) In 1839, Schleiden coined the term Collenchyma.
(ii) In 1858, Nageli coined the term Xylem and Phloem, Meristem and supporter of Apical cell
(iii) Mettenius in 1865, coined the term Sclerenchyma.
(iv) Tschirch in 1885 coined the term Sclereids and named four types of Sclereids - Brachy sclereids, Macrosclereids, Osteosclereids & Astrosclereids in 1889.
a) (i), (ii) and (iii) only b) (ii) (i) and (iv) only c) (iii), (iv) and (ii) only d) All of them
9. In 1914, Haberlandt coined the term xylem as Hadrome and Leptome for _____ and he classified the meristems.
a) Parenchyma b) Collenchyma c) Sclerenchyma d) Phloem
10. The mass, rib and plate meristem was discovered by Schuepp in _____ year.
a) 1920 b) 1923 c) 1926 d) 1928
11. Find out the wrongly matched pair.
a) Trichosclereids - Bloch in 1946 b) Shoot apex of Angiosperms- Popham in 1952
c) Tracheids - Sanio in 1963 d) Annular collenchyma - Schmidt in 1924
12. This meristem is responsible for elongation of internodes.
a) Primary meristem b) Intercalary meristem c) Mass meristem d) Rib meristem
13. It gives rise to primary vascular tissues that is xylem and phloem.
a) Procambium b) Protoderm c) Ground meristem d) Plate meristem
14. The other name of Rib meristem
a) Lateral meristem b) Plate meristem c) Pile meristem d) File meristem
15. A single apical _____ is the structural and functional unit.
a) Organism b) Organ c) Cell d) Tissue
16. Histogen theory is proposed by Hanstein and supported by _____.
a) Hanskley b) Strassburgur c) Nageli d) Clowes
17. The shoot apex comprises the following
a) Dermatogen b) Periblem c) Plerome d) All of them
18. It is the peripheral zone of shoot apex that forms epidermis.
a) Tunica b) Corpus c) root cap d) Calyptrogen
19. The corpus is the inner zone of shoot apex that forms
a) cortex b) stele c) both of them d) none of them
20. Calyptrogen gives rise to
a) Root cap b) Root hair c) cortex d) Pericycle
21. Quiescent Centre is located between root cap and differentiating cells of the _____.
a) Leaf b) Stem c) Flower d) Root
22. Parenchyma is a living tissue and made up of _____ walled cells.
a) thick b) hard c) thin d) none of them
23. Aquatic plants have
a) Stellate Parenchyma b) Aerenchyma c) Chlorenchyma d) Storage Parenchyma

24. In this type of tissue the cell wall is unevenly thickened. It contains more of hemicellulose and pectin besides cellulose.
a) Xylem b) Phloem c) Sclerenchyma d) Collenchyma
25. Bone cells are otherwise called
a) Branchysclereids b) Macrosclereids c) Osteosclereids d) Astrosclereids
26. Sclereids are dead cells, because the cell wall is very _____ due to lignification.
a) thin b) thick c) cellulose d) hemicellulose
27. Hair like thin walled sclereids are seen in the Nymphaea _____ and Aerial roots of Monstera.
a) Root b) Stem c) Fruit d) Leaf
28. Teak has _____ fibres.
a) Libriform fibres b) Fibre tracheids c) Septate fibres d) Gelatinous fibres
29. Outer bark of jute, kenaf, flax and hemp plants contain _____ fibres.
a) wood fibres b) Xylary fibres c) Longest fibres d) Bast fibres
30. Surface fibres are produced from the surface of the plant organs. Example for this
a) Cotton b) Teak c) Crotalaria d) Pyrus
31. Fibres obtained from the mesocarp of drupes like _____ is called Mesocarp Fibres.
a) Ground nut b) Garlic c) Coconut d) Tomato
32. Sisal, Coconut, Pineapple, Abaca gives _____ fibres.
a) Textile Fibres b) Brush fibre c) Paper making fibres d) Filling fibres
33. Xylem is derived from the Greek word Xylos. Xylose means _____.
a) Shoot b) Fibre c) Hard d) Wood
34. Ophioglossum species is example for
a) Exarch b) Endarch c) Centrarch d) Mesarch
35. _____ are chief water conducting elements in Gymnosperms and Pteridophytes.
a) Tracheids b) Vessel c) Trachea d) Xylem fibre
36. Vessels are dead cells, they are elongated tube like structure. They are chief water conducting elements in _____.
a) Gymnosperms b) Pteridophytes c) Angiosperms d) Algae
37. In _____ of Gymnosperm, vessels occur. The main function is conduction of water, minerals and also offers mechanical strength.
a) Cycas b) Pinus c) Mango d) Gnetum
38. The fibres of _____ associated with the xylem are known as xylem fibres.
a) Parenchyma b) sclerenchyma c) Collenchyma d) fibre
39. The only living cells in xylem tissue is
a) Tracheid b) Vessel c) Xylem Parenchyma d) Xylem fibre
40. Secondary xylem consists of
a) axial parenchyma b) radial parenchyma c) both of them d) none of them
41. Sieve cells are primitive type of conducting elements found in _____ and Gynosperms.
a) Pteridophytes b) Bryophytes c) Algae d) Fungi
42. In mature sieve tube _____ is absent but it contains a lining layer of cytoplasm.
a) Mitochondria b) Nucleus c) Ribosome d) Lysosome
43. A special protein seen in phloem is
a) Albumin b) Globulin c) Slime body d) Alpha protein

44. The dead cells in phloem
 a) Sieve elements b) Phloem parenchyma c) Companion cells d) Phloem fibre
45. The companion cells are present only in ____ and absent in Gymnosperms and Pteridophytes.
 a) Algae b) Fungi c) Chlorella d) Angiosperms
46. Usually, stomata are more in number on the _____ epidermis.
 a) upper b) lower c) both of them d) none of them
47. In grasses and sedges, the guard cells surrounded the stomata has _____ shaped.
 a) Circular b) Spherical c) Dumbbell d) Square
48. The guard cells and subsidiary cells help in opening and closing of _____ during gaseous exchange and transpiration.
 a) Stomata b) Palisade parenchyma c) Spony parenchyma d) Stele
49. In Nerium, in the multilayered epidermis the outer layer alone is _____.
 a) Pectinized b) Cutinized c) Both of them d) None of them
50. Piliferous layer of the root has two types of epidermal cells, long cells and short cells. The short cells are called.
 a) Trichomes b) stellate hair c) Trichoblast d) Glandular

LEVEL – II (51 - 105 Questions)

51. In angiosperms, pericycle gives rise to lateral roots, so they are _____ in origin.
 a) Exogenous b) Mesogenous c) Perigenous d) Endogenous
52. In a vascular bundle xylem placed towards inside and phloem towards outside, it is called
 a) Collateral b) Bicollateral c) Radial d) Concentric
53. Stems of Dicots and Gymnosperms have open vascular bundle, because it contains
 a) Parenchyma b) Collenchyma c) Sclerenchyma d) Cambium
54. Endodermis layer in root, has casparian strips. It was first noted by
 a) Robert Hooke b) Robert Brown c) Robert casparay d) Robert
55. The radial and the inner tangential walls of endodermal cells are thickened with ___ and lignin.
 a) Cellulose b) Suberin c) Hemicellulose d) Pectin
56. In bean, the conjunctive tissue in vascular system is composed of _____ cells.
 a) Parenchyma b) Cambium c) Xylem d) Phloem
57. Polyarch xylem is seen in
 a) Monocot root b) Dicot root c) Monocot stem d) Dicot stem
58. In Dicot root the xylem is
 a) Monoarch b) Triarch c) Tetrach d) polyarch
59. The vascular bundles in Dicot stem are
 a) Skull shaped b) Round shaped c) Spherical shaped d) Wedge shaped
60. Skull or oval shaped vascular bundles are seen in
 a) Monocot root b) Monocot stem c) Dicot root d) Dicot stem
61. Bundle cap or hard bast in Dicot stem is made up of
 a) Parenchyma b) Collenchyma c) Sclerenchyma d) Chlorenchyma
62. Cambium cells are capable of forming new cells during _____ growth.
 a) Primary b) Secondary c) both of them d) none of them
63. Scattered vascular bundles in the parenchymatous ground tissue is seen in
 a) Bean b) Helianthus c) Maize d) Pea

64. Xylem _____ are arranged in the form Y, in monocot stem.
a) Tracheid b) Vessel c) Xylem fibre d) Xylem parenchyma
65. In monocot stem, in a mature bundle the _____ protoxylem disintegrates and forms a cavity known as protoxylem lacuna.
a) Upper b) middle c) lowest d) side
66. _____ leaves are example, where spongy tissue alone is present in some epidermal cells.
a) Grasses b) Nerium c) Helianthus d) Bean
67. The vascular tissues form the skeleton of the leaf and are known as _____.
a) Mesophyll b) Veins c) Palisade d) Spongy
68. A stomata is surrounded by a pair of _____ shaped cells called guard cells.
a) oval b) rod c) spiral d) bean
69. _____ parenchyma cells are seen beneath the upper epidermis of the leaf.
a) Storage parenchyma b) Palisade c) Spongy d) Storage
70. _____ cells facilitate the exchange of gases with the help of air spaces in the leaf.
a) Palisade b) Storage c) Spongy d) Mesophyll
71. The border parenchyma in a Dicot leaf is otherwise known as
a) bundle cap b) bundle patch c) bundle sheath d) bundle cells
72. Hydathodes perform the function of
a) Tanspiration b) Respiration c) Guttation d) Photosynthesis
73. Plants that grow in saline environment has
a) Enzyme gland b) Hormone gland c) Salt gland d) water gland

NEET BASED QUESTIONS:

74. The balloon-shaped structures called tyloses _____ (NEET II – 2016)
a) originate in the lumen of vessels b) characterise the sap wood
c) are extensions of xylem parenchyma cells into vessels
d) are linked to the ascent of sap through xylem vessels
75. Cortex is the region found between _____ (NEET II – 2016)
a) epidermis and stele b) pericycle and endodermis
c) endodermis and pith d) endodermis and vascular bundle
76. Read I – IV and find the correct order of components from outer side to inner side in a woody dicot stem _____ (CBSE -AIPMT – 2015)
(I) secondary Cortex (II) wood (III) secondary phloem (IV) phellem
a) III, IV, II and I b) I, II, IV and III c) IV, I, III and II d) IV, III, I and II
77. You are given a fairly old piece of a dicot stem and a dicot root. Which of the following anatomical structures will you use to distinguish between the two? _____ (CBSE -AIPMT 2014)
a) secondary xylem b) secondary phloem c) protoxylem d) cortical cells
78. Heart wood differs from sapwood in _____ (CBSE -AIPMT 2010)
a) the presence of rays and fibres b) the absence of vessels and parenchyma
c) having dead and non-conducting elements d) being susceptible to hosts and pathogens
79. The annular and spirally thickened conducting elements generally develop in the protoxylem when the root or stem is _____ (CBSE -AIPMT 2009)
a) maturing b) elongating c) widening d) differentiating

80. Anatomically fairly old dicotyledonous root is distinguished from the dicotyledonous stem by the (CBSE- AIPMT 2009)
a) absence of secondary xylem b) absence of secondary phloem
c) presence of cortex d) position of protoxylem
81. In barley stem, vascular bundles are (CBSE -AIPMT 2009)
a) open and scattered b) closed and scattered c) open and in a ring d) closed and radial
82. Palisade parenchyma is absent in the leaves of (CBSE- AIPMT 2009)
a) sorghum b) mustard c) soyabean d) gram
83. Sugarcane plant has (AIIMS 2009)
a) reticulate venation b) capsular fruits
c) pentamerous flowers d) dump-bell shaped guard cells
84. Vascular tissues in flowering plants develop from (CBSE- AIPMT 2008 & JIPMER 2012)
a) phellogen b) plerome c) periblem d) dermatogen
85. The length of different internodes in a culm of sugarcane is variable because of (CBSE -AIPMT 2008)
a) short apical meristem b) position of axillary buds
c) size of leaf lamina at the node below each internode d) intercalary meristems
86. Passage cells are thin-walled cells found in (CBSE -AIPMT 2007)
a) endodermis of roots facilitating rapid transport of water from cortex to pericycle
b) phloem elements that serve as entry points for substances for transport to other plant parts
c) testa of seeds to enable emergence of growing embryonic axis during seed germination
d) central region of style through which the pollen tube grows towards the ovary
87. Which one of the following is not a lateral meristem? (CBSE -AIPMT 2010)
a) interfascicular cambium b) phellogen
c) intercalary meristem d) intrafascicular cambium
88. A common feature of vessel elements and sieve tube elements is (CBSE- AIPMT 2007)
a) enucleate condition b) presence of P. Protein
c) thick secondary wall d) pores on lateral walls
89. In a longitudinal section of a root, starting from the tip upward, the four zones occur in the following order (CBSE –AIPMT 2004)
a) root cap, cell division, cell enlargement, cell maturation
b) root cap, cell division, cell maturation, cell enlargement
c) cell division, cell enlargement, cell maturation, root cap
d) cell division, cell maturation, cell enlargement, root cap
90. The cells of the quiescent centre are characterized by (CBSE -AIPMT 2003)
a) having dense cytoplasm and prominent nucleus
b) having light cytoplasm and small nucleus
c) dividing regularly to add to the corpus
d) dividing regularly to add to tunica
91. P. Protein is found in (CBSE- AIPMT 2000)
a) parenchyma b) collenchyma c) sieve tube d) xylem
92. Specialized epidermal cells surrounding the guard cells are called (NEET (I) 2016)
a) bulliform cells b) lenticels c) complementary cells d) subsidiary cells
93. The interxylary phloem is found in the stem of (JIPMER 2013)
a) Cucurbita b) Salvia c) Calotropis d) none of these

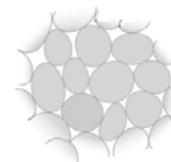
Directions:

The following questions 94 & 95 consist of two statements, one labelled Assertion and another labelled Reason. Select the correct answer from the codes given below:

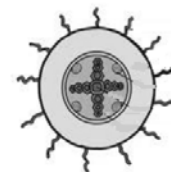
- a) Both assertion and reason are true and reason is the correct explanation of assertion
 b) Both assertion and reason are true, but reason is not the correct explanation of assertion
 c) Assertion is true but reason is false.
 d) Assertion and reason are false.
94. Assertion: Conducting tissues, especially xylem show greatest reduction in submerged hydrophytes.
 Reason: Hydrophytes live in water. So no need of tissues. (AIIMS – 2010)
95. Assertion: Long distance flow of photo assimilates in plants occurs through sieve tubes.
 Reason: Mature sieve tubes have partial cytoplasm and perforated sieve plates (AIIMS – 2012)
96. Duramen is present in (JIPMER 2016)
 a) the inner region of secondary wood b) a part of sap wood
 c) the outer region of secondary wood d) region of pericycle
97. Wound healing is due to (JIPMER 2013)
 a) ventral meristem b) secondary meristem c) primary meristem d) all of these
98. Which of the following tissues consists of living cells (JIPMER 2012)
 a) vessels b) tracheids c) companion cell d) sclerenchyma
99. The Quiescent centre in root meristem serves as a (JIPMER 2011)
 a) site for storage of food, which is utilized during maturation
 b) reservoir of growth hormones
 c) reserve for replenishment of damaged cells of the meristem
 d) region for absorption of water
100. In the sieve elements, which one of the following is the most likely function of P. Proteins? (JIPMER 2011)
 a) Deposition of callose on sieve plates b) Providing energy for active translocation
 c) Autolytic enzymes d) Sealing-off mechanism on wounding
101. Which of the following is made up of dead cells? (NEET 2017)
 a) Xylem parenchyma b) Collenchyma c) Phellem d) Phloem
102. The vascular cambium normally gives rise to (NEET 2017)
 a) phelloderm b) primary phloem c) secondary xylem d) periderm
103. Which of the following plants shows multiple epidermis? (Manipal 2012)
 a) Croton b) Allium c) Nerium d) Cucurbita

Picture Based Questions

104. This diagram represents----- tissue
 a) Collenchyma b) Parenchyma
 c) Sclerenchyma d) Fibre

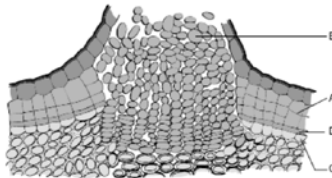


105. Identify the given picture.
 a) It is T.S of Dicot Root
 b) It is T.S of Monocot Root
 c) It is T.S of Dicot Stem
 d) It is T.S of Monocot Stem



UNIT – IV – PLANT ANATOMY (STRUCTURAL ORGANISATION)**CHAPTER - 10
SECONDARY GROWTH****TRY AND TEST YOURSELF****LEVEL – I (1 - 46 Questions)**

- Consider the following statements.
In spring season vascular cambium
 - is less active
 - produces a large number of xylary elements
 - forms vessels with wide cavities of these,
 - (i) is correct but (ii) and (iii) are not correct
 - (i) is not correct but (ii) and (iii) are correct
 - (i) and (ii) are correct but (iii) is not correct
 - (i) and (ii) are not correct but (iii) is correct.
- Usually, the monocotyledons do not increase their girth, because
 - They possess actively dividing cambium
 - They do not possess actively dividing cambium
 - Ceases activity of cambium
 - All are correct
- In the diagram of lenticel identify the parts marked as A, B, C, D



- A) phellem B) Complementary tissue C) Phellogen D) Phellogen
 - A) Complementary tissue B) Phellem C) Phellogen D) Phellogen.
 - A) Phellogen B) Phellem C) Phellogen D) complementary tissue
 - A) Phellogen B) Phellem C) Complementary tissue D) Phellogen
- The common bottle cork is a product of
 - Dermatogen
 - Phellogen
 - Xylem
 - Vascular cambium
 - What is the fate of primary xylem in a dicot root showing extensive secondary growth?
 - It is retained in the center of the axis
 - It gets crushed
 - May or may not get crushed
 - It gets surrounded by primary phloem
 - The important feature of intrafascicular cambium.
 - It originates from the procambium
 - It originates from medullary rays
 - It originates from primary xylem
 - It originates from primary phloem
 - The Cambium is present in-between the vascular bundles.
 - Intrafascicular cambium
 - Interfascicular cambium
 - Both of them
 - None of them
 - The active vascular cambium possesses cells with large central _____ surrounded by a thin, layers of dense cytoplasm.
 - Nucleus
 - Chloroplast
 - Mitochondria
 - Vacuole
 - The axial system of Secondary Xylem does not contain
 - Vertical files of treachery elements
 - rows of parenchyma
 - Fibres
 - Wood parenchyma

10. Secondary Xylem consists of
a) Treachery elements b) Fibres c) axial parenchyma d) All of them
11. Sieve elements, phloem fibres, and axial parenchyma forms
a) Primary Xylem b) Primary Phloem c) Secondary Xylem d) Secondary Phloem
12. This wood is commonly present in Angiosperms.
a) Porous Wood b) Non-Porous Wood c) Primary wood d) Secondary wood
13. The spring wood is otherwise known as
a) autumn wood b) late wood c) Early wood d) Sap wood
14. The spring wood is _____ in colour and has a lower density.
a) lighter b) darker c) both of them d) None of them
15. The _____ wood is darker and has a higher density.
a) Porous Wood b) Non-Porous Wood c) Autumn wood d) Spring wood
16. In some trees more than one _____ is formed with in a year due to climatic changes.
a) growth ring b) development ring c) division ring d) elongation ring
17. Dendroclimatology is a branch of dendrochronology concerned with constructing records of past climates and climatic events by analysis of tree growth characteristics, especially growth rings.
a) Dermatology b) Neurology c) dendrochronology d) Cardiology
18. In autumn wood, the activity of cambium is
a) faster b) very faster c) medium d) slower
19. _____ woods are woods in which the vessels or pores are rather uniform in size and distribution throughout an annual ring.
a) Sap wood b) Spring wood c) Diffuse porous wood d) Ring porous wood
20. The pores of the early wood are distinctly larger than those of the late wood) Thus rings of wide and narrow vessels occur. These woods are
a) Spring wood b) Ring porous wood c) autumn wood d) Heart wood
21. Additional growth rings are developed within a year due to adverse natural calamities, such rings are called _____ rings.
a) Pseudo annual rings b) false annual rings c) Both of them d) None of them
22. Usually Tyloses are formed in secondary xylem _____ that have last their function for example in heart wood.
a) Tracheids b) Xylem fibre c) Parenchyma d) Vessels
23. The sap wood conducts _____ while the heart wood stops conducting _____.
a) Food b) Minerals c) Water d) All of them
24. As vessels of the heart wood are blocked by _____ water is not conducted through them.
a) tyloses b) resins c) tannins d) crystals
25. The hardest part of the wood is _____.
a) Porous wood b) Heart wood c) Non-porous wood d) Sap wood
26. From the _____ point of view generally the heart wood is more useful than the sap wood.
a) Political b) Social c) economic d) Environment
27. Identify the correct statement of the following. Sap wood or Alburnum is
(i) The living part of the wood. (ii) It is dark in coloured.
(iii) tyloses are present (iv) it is not durable and not resistant to microorganisms.
a) (i) and (ii) are correct, others incorrect b) (i) and (ii) are correct, (ii) and (iv) are not correct
c) All the correct d) (i) and (iv) are correct, (ii) and (iii) incorrect
28. The dye haematoxylin is obtained from the heart wood of _____ *campechianum*.
a) Helianthus b) Hibiscus c) Haematoxylum d) Hevea

29. _____ is a gymnospermic plant. It produces Canada balsam from its resin ducts.
 a) *Abies balsamea* b) *Cycas* c) *Datura metal* d) *Solanum nigram*
30. Phellem is otherwise known as
 a) Periderm b) Cork c) Phellogen d) Phelloderm
31. Phellem is broken here and there by the presence of
 a) Stomata b) Tyloses c) pores d) lenticels
32. These are extrastelar in origin.
 a) Epidermis b) Cortex c) Pericycle d) All of them
33. The secondary cortex is otherwise known as
 a) Periderm b) Phelloderm c) Phellem d) Phellogen
34. Bark protects the plant from _____ fungi and insects, prevents water loss by evaporation and guards against variations of external temperature.
 a) Saprophytic b) Epiphytic c) Parasitic d) Autotrophic
35. If the phellogen forms a complete cylinder around the stem, it gives rise to _____ barks in *Quercus*.
 a) Round b) Spherical c) Oval d) Ring
36. When the bark is formed in overlapping scale like layers, it is known as scale bark. It is seen in
 a) *Quercus* b) Guava c) *Crotalaria* d) *Cannabis*
37. Lenticel is raised opening or pore on the epidermis or bark of stems and _____.
 a) Leaf b) Flower c) Root d) Seed
38. *Cinchona* bark contains _____ compound called quinine.
 a) anticholera b) antityphoid c) antiseptic d) antimalarial
39. *Quercus suber* plant cork is used as an essential element in the production of _____ shuttle cocks.
 a) Tennis b) badminton c) Cricket d) Hockey
40. In *Hevea brasiliensis*, rubber is obtained from _____ vessels of inner bark.
 a) mucilage b) resin c) latex d) rosin
41. Turpentine obtained from bark of _____ is used as thinner for oil based paints and organic solvents.
 a) *Cycas* b) Conifer c) *Gnetum* d) Christmas tree
42. The oldest Spice _____ is used as ingredients of curry powder, medicine for cardiac stimulant, diarrhea and vomiting.
 a) Pepper b) Chillies c) Cinnamon d) rubber
43. In Secondary growth in dicot root, generally periderm originates from _____.
 a) Cortex b) Pericycle c) Endodermis d) Stele
44. In Secondary growth occurs in dicot stem, the periderm originates from _____.
 a) Epidermis b) Periderm c) Phellogen d) cortical cells
45. When Secondary growth, first the cambial ring formed is wavy in the beginning and later becomes circular in
 a) Dicot stem b) Monocot stem c) Dicot root d) Monocot root

Picture Based Question

46. This diagram shows
 a) Structure of natural wood
 b) Structure of annual ring
 c) Structure of tyloses
 d) Structure of periderm

