

1. Microfibrils are composed of
 - (A) Hemicellulose
 - (B) Cellulose
 - (C) Peptidoglycan
 - (D) Lignin

2. The endosperm of Cycas is
 - (A) Diploid
 - (B) Triploid
 - (C) Haploid
 - (D) Tetraploid

3. Structural material of fungal cell wall is
 - (A) Chitin
 - (B) Pectin
 - (C) Cellulose
 - (D) Peptidoglycan

4. Interconnected flattened sacs of endoplasmic reticulum is called
 - (A) Cisternae
 - (B) Ribosomes
 - (C) Tubules
 - (D) Stroma

5. Electron transport chain is located on
 - (A) Inner membrane of mitochondria
 - (B) Matrix of mitochondria
 - (C) Outer membrane of mitochondria
 - (D) Intermembraneous space between two membranes of mitochondria

6. An enucleated plant cell is
 - (A) Epidermal cell
 - (B) Companion cell
 - (C) Xylem parenchyma
 - (D) Sieve tube cell

7. Identify the aromatic amino acid.
- (A) Tyrosine
 - (B) Valine
 - (C) Isoleucine
 - (D) Methionine
8. Epidermis is produced from
- (A) Ground meristem
 - (B) Phellogen
 - (C) Procambium
 - (D) Protoderm
9. Identify which of the following is not a characteristic feature of meristematic cells :
- (A) They are isodiametric
 - (B) Cells are arranged with intercellular spaces
 - (C) Possess power of division
 - (D) Not differentiated
10. Boron assists in
- (A) Enzyme activation
 - (B) Photosynthesis
 - (C) Sugar transport
 - (D) Acting as enzyme co factor
11. The phenomenon exhibited by green plants grown in complete darkness is
- (A) Apical dominance
 - (B) Thermoperiodicity
 - (C) Abscission
 - (D) Etiolation
12. Crossing over occurs in
- (A) Leptotene
 - (B) Zygotene
 - (C) Pachytene
 - (D) Diakinesis

13. Senescence in plants can be delayed by
- (A) Auxin
 - (B) Gibberellin
 - (C) Kinetin
 - (D) Ethylene
14. Spindle fibre is made up of
- (A) Flagellin
 - (B) Tubulin
 - (C) Serecin
 - (D) Fibriein
15. Identify the high energy bond present in ATP molecule.
- (A) C-O
 - (B) C-C
 - (C) C-N
 - (D) P-O
16. The condition in which anthers of all the stamens of a flower are united while filaments are free can be observed in
- (A) Fabaceae
 - (B) Asteraceae
 - (C) Malvaceae
 - (D) Liliaceae
17. The process of formation of RNA from DNA is referred as
- (A) Translation
 - (B) Conjugation
 - (C) Transformation
 - (D) Transcription
18. The term 'Okazaki' is related to
- (A) DNA replication
 - (B) Transcription
 - (C) Translation
 - (D) Mutation

19. The term Niche refers to
- (A) Place of living
 - (B) Specific function
 - (C) Habitat and specific function
 - (D) Diversity at species level
20. The most abundant element present in plant is
- (A) Nitrogen
 - (B) Iron
 - (C) Carbon
 - (D) Silicon
21. Blight of rice is caused by
- (A) *Xanthomonas*
 - (B) *Pseudomonas*
 - (C) *Phytophthora*
 - (D) *Gibberella*
22. The enzyme used for recombinant DNA technology is
- (A) Restriction enzyme
 - (B) Allosteric enzyme
 - (C) Chemically synthesized enzyme
 - (D) Lysozyme
23. Aleurone layer is present in
- (A) Bacterial biofilm
 - (B) Virus infected plant cell
 - (C) Pathogenic fungi
 - (D) Seed
24. Virus free plant can be obtained by
- (A) Antibiotic treatment
 - (B) Bordeaux mixture
 - (C) Root tip culture
 - (D) Shoot tip culture

25. From the list below select the group that includes protozoa, protistan algae, slime moulds.
- (A) Fungi
 - (B) Plantae
 - (C) Monera
 - (D) Protista
26. Phylogenetic system of classification is based on
- (A) Biochemical properties
 - (B) Quantitative assessment of similarities and differences between organisms
 - (C) Evolutionary relationship
 - (D) Cytological characteristics of organisms
27. Teichoic acid is present in which cell component in bacteria ?
- (A) Cell wall
 - (B) Plasma membrane
 - (C) Outer membrane
 - (D) Flagella
28. The term episome refers to a type of
- (A) Plasmid
 - (B) Cell wall
 - (C) Membrane
 - (D) Gene
29. Nucleoid is
- (A) Extrachromosomal genetic material
 - (B) Nuclear material in *Volvox*
 - (C) Nuclear material in bacteria
 - (D) Extracellular DNA in bacteria
30. Transfer of genetic material from one bacterium to another through cell contact is called
- (A) Binary fission
 - (B) Transduction
 - (C) Transformation
 - (D) Conjugation

31. Name the chemical deficiency that **cause** Parkinson's disease, while when it is excess it cause schizophrenia.
- (A) Dopamine
 - (B) Acetylcholine
 - (C) Endorphins
 - (D) Glycine
32. The transformation of a normal cell to cancer may start with changes in the
- (A) Cytoplasm
 - (B) Nucleus
 - (C) Mitochondria
 - (D) Fibronectin
33. Hypofunction of adrenal cortex results in
- (A) Cretinism
 - (B) Myxoedema
 - (C) Conn's disease
 - (D) Addison's disease
34. Which one of the following is sanguivorous ?
- (A) Male Cockroach
 - (B) *Pila*
 - (C) Female Mosquito
 - (D) Prawn
35. Which of the following is absent in Leech ?
- (A) Parapodia
 - (B) Ocelli
 - (C) Clitellum
 - (D) Salivary glands
36. Male and female cockroaches can be distinguished by
- (A) The presence of sting gland in female
 - (B) Presence of a pair of anal styles in male
 - (C) Females are larger than males
 - (D) Presence of alary muscles in males.
37. Keber's organ is found in
- (A) Sepia
 - (B) Octopus
 - (C) *Pila*
 - (D) Unio

38. The right ovary is rudimentary in
(A) Sharks
(B) Birds
(C) *Sphenodon*
(D) Calotes
39. Haemophilia is an example of
(A) Y-linked inheritance
(B) XY-linked inheritance
(C) Autosomal inheritance
(D) Sex linked recessive inheritance
40. In Electrocardiograph (ECG), the P-wave represents
(A) Repolarisation of Atria
(B) Repolarisation of Ventricles
(C) Depolarisation of Atria
(D) Depolarisation of Ventricles
41. If the mother is of blood group O and father is of AB, the possible blood group of their child is
(A) A or B
(B) A or AB
(C) B, AB, or O
(D) AB or O
42. What is NOT correct about the circulatory system of aves ?
(A) Heart is four chambered
(B) Well-developed renal portal system
(C) Sinus venosus and truncus arteriosus are lacking
(D) RBC are nucleated
43. In which of the following organs Ornithine cycle occurs to synthesize urea ?
(A) Liver
(B) Pancreas
(C) Duodenum
(D) Stomach
44. Sarcoma is cancer of
(A) Epithelial tissue
(B) Mesodermal tissue
(C) Blood
(D) Endodermal tissues

45. Chemically the bile salts are the derivatives of
(A) Cholesterol
(B) Catecholamine
(C) Amino acids
(D) Fatty acids
46. In mammals, spermatogenesis is stimulated by
(A) MSH
(B) TSH
(C) ADH
(D) FSH
47. The enzymes present in the gastric juice of stomach are
(A) Pepsin and renin
(B) Trypsin and renin
(C) Amylase and lipase
(D) Maltase and sucrase
48. Correct sequence of a cardiac cycle is
(A) Ventricular systole – Joint diastole – Atrial systole
(B) Atrial systole – Ventricular diastole – Joint diastole
(C) Ventricular systole – Ventricular diastole – Atrial systole – Joint diastole
(D) Joint systole – Joint diastole – Atrial systole – ventricular systole
49. Hypertonic urine formation is a characteristic of kidneys of
(A) Fishes and amphibians
(B) Amphibians and reptiles
(C) Reptiles and fishes
(D) Birds and mammals
50. In mosquitos, the sex differentiation can be done on the basis of
(A) Size of wings
(B) Antennae
(C) Antennae and maxillary palps
(D) Ocelli
51. Retrogressive metamorphosis is shown by
(A) Vertebrates
(B) Cephalochordates
(C) Urochordates
(D) Cyclostomes
52. Double circulation is found in the heart of
(A) Birds and amphibians
(B) Birds and mammals
(C) Fishes and amphibians
(D) Amphibians and reptiles

53. In sponges, flow of water current in the spongocoel is maintained by
(A) Collar cells
(B) Amoeboid cells
(C) Epithelial cells
(D) All of the above
54. Which one of the following cells is absent in the endoderm of hydra ?
(A) Sensory cells
(B) Nerve cells
(C) Nutritive muscular cells
(D) Cnidoblasts
55. Nerve cells are not found in
(A) Platyhelminthes
(B) Coelenterates
(C) Sponges
(D) Echinoderms
56. In molluscs, the general body cavity is
(A) Blastocoel
(B) Hydrocoel
(C) Haemocoel
(D) Pseudocoel
57. Excretion in hydra takes place by
(A) Flame cells
(B) Nephridia
(C) Cnidoblasts
(D) General body surface
58. Which of the following is not a granulocyte ?
(A) Lymphocyte
(B) Basophil
(C) Neutrophil
(D) Eosinophil
59. Which one of the following is a limbless amphibian ?
(A) Necturus
(B) Proteus
(C) Ichthyophis
(D) Salamandra
60. Addiction to tobacco is caused by
(A) Cocaine
(B) Nicotine
(C) Caffeine
(D) Histamine