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) Intermembranous 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) Serocin
   (D) Fibrein

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 mosquitoes, 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) Lympocyte
   (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