

**Instructions:**

- **Draw diagrams wherever required.**
- **Unlabeled diagrams do not attract marks.**

**PART-A**

**I. Select the correct answer from the choices given below:**

**1x15=15**

1. Which is the correct binomial nomenclature for mango plant?  
a) Mangifera Indica                      b) mangifera indica                      c) Mangifera indica                      d) mangifera Indica
2. Methanogens occur in  
a) Rumen of cattle and Biogas plants                      b) Swamps                      c) Rice fields                      d) All the above
3. The group of plants in which ovules are not enclosed by ovary wall are called  
a) Angiosperms                      b) Gymnosperms                      c) Pteridophytes                      d) Mosses
4. Bioluminescence is the property of  
a) Ctenophores                      b) Platyhelminthes                      c) Aschelminthes                      d) Annelida
5. The condition when stamen is attached to perianth is called  
a) Epipetalous                      b) Epiphyllous                      c) Epigynous                      d) Epidermis
6. On the stem the epidermal hairs are called  
a) Trichomes                      b) cilia                      c) setae                      d) flagella
7. How many pairs of cranial nerves arise from the brain of frog  
a) 10 pairs                      b) 12 pairs                      c) 8 pairs                      d) 20 pairs
8. Ribosomes of bacteria, mitochondria, chloroplast, prokaryotes are of which type  
a) 60S                      b) 80S                      c) 50S                      d) 70S
9. The most abundant protein in the whole of the biosphere is  
a) RuBisCO                      b) albumin                      c) Collagen                      d) myosin
10. The final stage of meiotic prophase I is  
a) diakinesis                      b) cytokinesis                      c) karyokinesis                      d) none
11. In chromatogram yellow green is exhibited by which pigment  
a) Chlorophyll a                      b) Chlorophyll b                      c) xanthophyll                      d) carotenoids
12. Auxins were first isolated from  
a) sweat                      b) human saliva                      c) tears                      d) human urine
13. Volume of air inspired or expired during normal respiration by a healthy man is called  
a) Tidal volume                      b) Inspiratory reserve value  
c) Expiratory reserve value                      d) Residual value
14. Acute chest pain when no enough oxygen is reaching the heart muscles is called  
a) hypertension                      b) Angina pectoris.                      c) heart failure                      d) Coronary heart disease
15. Inflammation of joints due to accumulation of uric acid is called  
a) Tetany                      b) Arthritis                      c) Gout                      d) osteoporosis

**II. Fill in the blanks with the appropriate word given below:**

**1x5=5**

(red algae, Insulin, radula, glucagon, scutellum, synovial )

16. The fluid which helps in lubricating the articulating surfaces between two joints is called.....
17. The alpha cells of islet of langerhan's secrete a hormone called .....
18. The members of Rhodophyceae are commonly called .....
19. The rasping organ in the members of molluscans is called.....
20. The outer covering of endosperm is proteinaceous layer that seperates it from the embryo is called.....

**PART B****III. Answer (any 5) of the following:****5x2=10**

21. Classify pteridophytes into it's classes.
22. Mention the two body forms of poriferans with examples.
23. Draw bacteria of different shapes and label.
24. What is a mesosome in a prokaryotic cell? Mention the functions it performs.
25. Draw the structure of the amino acid, alanine.
26. What is the significance of meiosis?
27. Describe briefly arithmetic growth and geometric growth.
28. What is the difference between blood and Lymph.

**PART C****IV. Answer (any 5) of the following:****5x3=15**

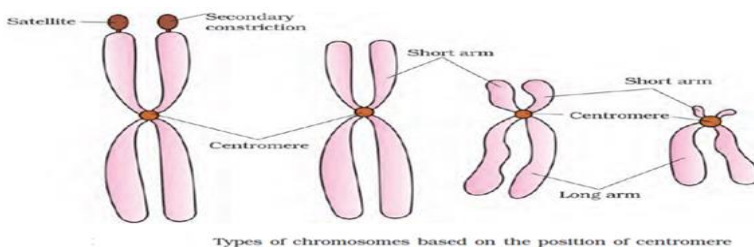
29. What are the different types of movements exhibited by the cells of human body?
30. a. Water vascular system is a characteristic feature of which group of animal kingdom?  
b. Segmentation on the body was observed for the first time in animals of which phylum.  
c. What is the importance of air bladder in pisces?
31. Explain the three types of phyllotaxy with examples.
32. Draw a neat labelled diagram of the internal structure of cilia/flagella.
33. Describe the important properties of enzymes.
34. Give a comparison between cyclic and non-cyclic photophosphorylation.
35. Name the plant growth regulator which helps in:
  - a. Quick ripening of fruits.
  - b. Bolting a rosette plant
  - c. Tolerance of plants to various kinds of stress.
36. Draw a standard ECG and explain the different segments in it.

**PART -D****V. Answer (ANY THREE) Of the following:****3x5=15**

37. Define placentation and explain the types of placentation with diagrams.
38. Draw the female reproductive system of frog.
39. Explain fluid mosaic model with neat labeled diagram.
40. Give the schematic representation of Glycolysis.
41. a. Draw a neat labeled diagram of longitudinal section of kidney.  
b. Explain any two disorders of excretory system.

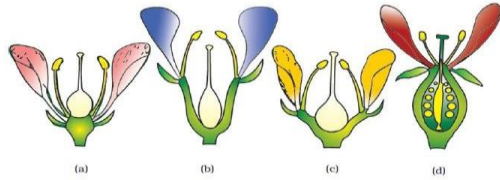
**VI. Answer (any 2) of the following:****2x5=10**

42. Draw a neat labeled diagram of human respiratory system.
43. Describe briefly the Calvin cycle.
44. a Name the types of chromosome given below:

**4+1**

- b. Define Centromere.

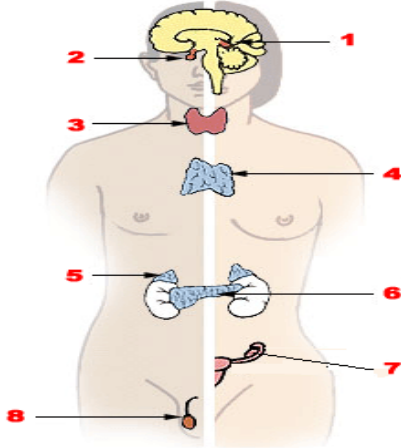
45. a. Describe the flowers based on the position of calyx, corolla and androecium with respect to ovary on thalamus. 4+1=5



b. Differentiate actinomorphic and zygomorphic symmetry in flowers.

46. a. Define endocrine glands.

b. Label the endocrine glands in the diagram given below.



47. What is a stomatal apparatus? Explain the structure of stomata with a neat labelled diagram.

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