Roll No. _____ **Code : 112012-044**

Please check that this question paper contains **30** questions and **4** printed pages.

CLASS-XI
BIOLOGY

Time Allowed : 3 Hrs. **Maximum Marks : 70**

General Instructions :

(i) All questions are compulsory.

(ii) There are 30 questions in all. Question numbers 1 to 8 carry one mark each; 9-18 carry two marks each; 19-27 carry three marks each and 28-30 carry 5 marks each.

(iii) Please read the this question paper carefully for Ist 15 minutes & no writing work is permitted during this time.

Section-A

1. The kingdom which includes unicellular plants and animals is called–
   (a) Monera (b) Protista
   (c) Fungi (d) Plantae

2. More number of Mitochondria will be found in the cells of–
   (a) Germinating seeds (b) Dormant seeds
   (c) Dry seeds (d) Wet seeds

3. At the time of interview, the heart beat often becomes faster due to–
   (a) release of adrenaline (b) hyposecretion of renin
   (c) release of ADH (d) release of corticotrophin

4. Loss of water in the form of droplets from the tips of the leaves is associated with–
   (a) Guttation (b) Transpiration
   (c) Evaporation (d) Respiration

5. Which of the following is ectodermal in origin ?
   (a) Kidneys (b) Brain
   (c) Lungs (d) Liver

6. Write the full form of ICBN.

7. Name the hormones whose deficiency causes diabetes mellitus and diabetes insipidus.

8. Which plant hormone is called anti-ageing hormone ?

Section-B

9. Both gymnosperms and angiosperms bear seeds, then why are they classified separately ?

OR

Differentiate between–

(i) Liverworts and mosses

(ii) Red algae and brown algae

10. The two strands of DNA helix are said to be antiparallel. Explain.

11. What structural and functional characteristics do cilia, flagella and centrioles have in common ?

12. Name the two main constituents of the plasma membrane and show how they are arranged with the help of a diagram.

13. Briefly describe water potential. What are the factors affecting it ?

14. Describe the role of bile salts in the digestion and absorption of fats.

15. What is the role of pCO_2 in the transport of oxygen.

16. Name the two heart sounds. How are they produced ?

17. How does ADH regulate body fluid volume ? Explain.

18. What makes the synovial joints freely movable ? List any two types of synovial joints.

Section-C

19. Give a one word scientific term for the following (i) blood filled cavity of Arthropods

(ii) Excretory organs of Annelids

(iii) Free floating form of cnidaria

(iv) stinging cells of jelly fishes

(v) molluscans with two halved shells

(vi) young one of cockroach

OR

Give special features of phylum Echinodermata. Name two animals belonging to this phylum, writing their scientific as well as common names.

20. Name the three basic tissue systems found in he flowering plants. Write the names of tissues included in each system.

21. (a) Mention the functions of the following structures–

(i) Ureters in frog

(ii) Malphigian tubules

(iii) Body wall in earthworm

(b) Name the mouthparts of cockroach.

22. How do enzymes bring about high rates of chemical conversions ?

23. Give scientific reasons for the following–

(i) Iron is not a constituent of chlorophyll but its deficiency causes chlorosis.

(ii) *Rhizobium,* the bacteria found in the root nodules can fix nitrogen only in presence of the pigment leghaemoglobin.

(iii) Solute enters into the xylem from cortex of roots only by passing through symplastic pathway across the endodermis.

24. (i) Name the breakdown product of glucose which enters into mitochondria during aerobic respiration.

(ii) Name the enzyme responsible for the phosphorylation of glucose and fructose into glucose-6-phosphate and fructose-6-phosphate respectively.

(iii) Write the chemical reaction of carboxylic acid cycle in which FAD is reduced to $FADH_2$.

25. What does Photoperiodism and Vernalisation refer to ? Describe their significance.

26. Distinguish between–

(i) Villi and microvilli

(ii) Sucrase and maltase

(iii) Peptic and oxyntic cell

27. Draw a vertical section of the human eye and label any six of those parts only through which the light rays pass and fall on the retina.

Section-D

28. (a) Differentiate between the anatomical structures of dicot stem and a monocot root.

(b) Draw a labelled diagram of the vascular bundle of a monocot stem.

OR

(a) Which tissue of the leaf contains chloroplast ?

(b) Name the main components of xylem. Which of these is suitable for carrying water ?

(c) What are the general characteristics of selerenchyma tissue ? Which type of cells are responsible for the grittiness of the pulp of pear ?

29. Draw a diagrammatic view of cell-cycle, indicating various stages involved in the formation of two cells from one cell. Describe various events taking place during interphase.

OR

With the help of suitable diagrams explain the sequence of changes taking place during Meiosis-I in animal cell.

30. Schematically represent noncyclic photophosphorylation in angiosperms giving all components. Why is the process called non-cyclic ?

OR

Name any two C-4 plans. Describe how CO_2 is fixed in such plants.