

**Annual Examination 2015-16**  
**Science - Biology**  
**Class - XI**

Time allowed: 3 hours Maximum Marks: 70

**General instructions:**

- a) All questions are compulsory.
- b) There are 26 questions in total. Q. Nos. 1 to 5 carry 1 mark each, Q. nos. 6 to 10 carry 2 marks each, Q. nos. 11 to 22 carry 3 marks each, Q. no. 23 carry 4 marks and Q. nos. 24 to 26 OTBA questions carry 3, 3 and 4 marks respectively.
- c) The diagram should be neatly and properly drawn, wherever necessary.

**Section A**

1. What is the function of pigment cells in case of frog?
2. What is a tonoplast?
3. Name the compound concerned with the storage of oxygen in vertebrate muscle.
4. What is prothallus?
5. In which case a cofactor becomes a prosthetic group.

**Section B**

6. Explain briefly about mitochondria.
7. What is bolting? What conditions can induce bolting and how it can be induced artificially?

**Or**

Where is the synthesis of auxins takes place in plants? Also mention the functions of auxin.

8. Mention any two metabolic disorders which can be diagnosed only after analysis of urine.
9. While writing a nomenclature what general rules should be followed?
10. What is hydroponics? Give one application of this technique.

**Section C**

11. Differentiate between macro-elements and microelements.

**OR** Describe the structure of phospholipids. How are they arranged in a cell membrane?

12. What is the importance of minerals in animal life?
13. Mention the importance of potassium and magnesium in plants.
14. (i) What is the sequence of phases in cell cycle?  
(ii) Briefly describe various stages in cell cycle during interphase preceding to mitosis.  
(iii) When does the DNA synthesis takes place in cell cycle?
15. Describe the structure of a neuron.
16. Enumerate the types of cell in connective tissue.
17. Which part of plant is associated with the production of gibberellin? State two functions of this hormone and mention why it was named gibberellin?
18. Explain the main steps that are involved in aerobic respiration.
19. Name the hormones secreted by follicles of thyroid gland. Give two symptoms of hypothyroidism and hyperthyroidism and name the diseases.
20. Cite the location of ultra-filtration, re-absorption and secretion occurring in nephron?  
**OR** Enumerate the factors favouring glomerular filtration?
21. List three important properties of enzymes.
22. Name the various types of simple epithelia. Describe any one of these epithelia in brief.

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### Section D

23. Shiksha a class XI biology student went for a regular eye checkup at a nearby hospital. While waiting for her turn, she saw a lady with a white patch in the eye. She kept thinking about what must have led to this condition. During her checkup, she asked the Doctor about the white patch. The doctor appreciated her for her keen observation and told her that it was due to cataract.

- (i) What do you understand by the term cataract?
- (ii) Name the different parts of a human eye.
- (iii) What values are shown by Shiksha?
- (iv) Name some other disorders of eye.

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### Section E

24. OTBA
25. OTBA
26. OTBA

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