

**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. Name the basic unit of chitin molecule.
2. What are porins?
3. What is mineral nutrition?
4. Which unit membrane is used to bound a vacuole of a plant cell?
5. Give the name of the method by which cytokinesis takes place in a plant cell.

**Section B**

6. Where do you find the following in DNA, RNA or both?
  - (i) Ribose
  - (ii) Deoxyribose
  - (iii) Adenine
  - (iv) Uracil
7. What is hydroponics? Give one application of this technique.

**Or**

- (i) Give examples of two autotrophs and two heterotrophs.
- (ii) Define essential element.
8. What is plasma membrane?
9. Name the respiratory organs of these arthropods.
  - (i) Cockroach

(ii) Kingcrab

10. Of what tissues endoskeleton is made up of? Give its main parts.

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### Section C

11. Mention any two special properties of neural tissues.

12. Write the structural formula of the following:

(i) Adenine

(ii) Cytosine

(iii) Guanine

13. Name the secretions of the following glands

(i) Pituitary

(ii) Thymus

(iii) Ovary

(iv) Hypothalamus

14. What are pneumatophores? Also give an example.

15. "Potato is a stem and sweet potato is a root". Justify the statement on the basis of external features.

16. (i) What is the sequence of phases in cell cycle?

(ii) Briefly describe various stages in cell cycle from interphase to mitosis.

(iii) When does DNA synthesis takes place in cell cycle?

Or

Give important features of Watson and Crick double helical model of DNA.

17. What is meant by cyclosis or cytoplasmic streaming? Write two functions of it.

18. (i) Which part of plant is associated with the production of gibberellin?

(ii) State two main functions of this hormone.

19. Differentiate between symplast and apoplast pathway.

20. Define vernalisation. How does it help in flowering in plants?

21. Write the functions of different proteins. Name their monomeric unit.

22. Name the hormone which

(i) Is gaseous in nature?

(ii) Is responsible for photoperiodism?

(iii) Induces femaleness in flower of cucumber.



### Section D

23. Atul a XI class biology student used to go for a walk along with his grandfather every morning. One day during the walk his grandfather suffered a chest pain. So, he had been admitted to a nearby hospital, their doctor's after treatment come to a conclusion, that his grandfather has suffered from over cholesterol. On that day Atul thought various aspects related to and he asked his Biology teacher some questions related to it on next day of his school.

- (i) What is cholesterol?
- (ii) What amount of fats are needed by the body in order to sustain a healthy life.
- (iii) Which bond is present in cholesterol?
- (iv) What are the values shown by Atul as a Biology student?

### Section E

- 24. OTBA
- 25. OTBA
- 26. OTBA

