

**Final Paper (11 March 2016)**  
**Class XI**  
**Paper- BIOLOGY**  
**(Set-B)**

**Time: 3hrs.**

**M.M. 70**

**General Instructions:**

- i) Question paper consist of four sections A, B, C, D and E in Part- I. An internal choice has been provided in one question of 3 marks and questions of 5 marks.
- ii) Wherever necessary, the diagram drawn shown be neat and properly labelled.
- iii) Part – II is of OTBA, consisting two questions of 5 marks each.

**SECTION - A**

- Q1. Name the aestivation in which margins of petals do not overlap in any particular direction. (1)
- Q2. Name the leucoplast that store carbohydrates in plants. (1)
- Q3. Define apical dominance. (1)
- Q4. Name the hormone secreted by  $\alpha$  cells of pancreas in human. (1)

**SECTION – B**

- Q5. Define pseudocoelom. Give example of acelomates. (2)
- Q6. Draw a flow chart to show Haplontic life cycle pattern. Name the stage in which meiosis take place. (2)
- Q7. Define co-factors and apoenzyme. (2)
- Q8. Distinguish between transpiration and guttation. (2)
- Q9. Differentiate between apocarpous and syncarpous ovary. (2)

**SECTION – C**

- Q10. Define glomerular filtration. What are podocytes? Give its function. (3)
- Q11. a) Draw a well labelled diagram of sarcomere. (3)  
b) Define sarcomere.
- Q12. Write a short note on: (3)
  - a) Ear ossicle
  - b) Organ of corti
- Q13. “Respiration is amphibolic pathway.” Comment on it with examples. (3)
- Q14. What are the steps involved in formation of a root nodule? Draw diagram also. (3)
- Q15. a) Name the stage of cell cycle at which one of the following events occur. (3)
  - i) Pairing of homologous chromosomes take place.
  - ii) Crossing over between homologous chromosomes take place
  - iii) Chromosomes are moved to spindle equator.
  - iv) Chiasmata appear  
b) Why is mitosis called equational division?

Q16. Explain the steps of catalytic cycle of an enzyme action. (3)

Q17. Draw a well labelled diagram of T.S. flagella. (3)

Q18. a) Cockroach has open circulatory system. Explain it. (3)

b) Name the type of vision formed by eye in cockroach. Why it is called so?

**OR**

a) Draw a well labelled diagram of alimentary canal of cockroach.

b) Give the function of malpighian tubules.

**SECTION – D**

Q19. In the village, Arvind observed that grand father used to spread some white substance on the crops. So, one day he asked him the reasons for doing so. Grandfather replied that he is spreading NPK fertilizer to get better yield of crops. (4)

Read the above passage and answer the following questions:

a) What is NPK fertilizer?

b) What is the role of phosphorus and potassium in plants?

c) What is exhibited by grandfather's action?

**SECTION-E**

Q20. a) Explain the calvin cycle in detail with the help of schematic representation. (5)

b) How many number of ATP and NADPH are required for the production of one glucose molecule?

**OR**

Explain the citric acid cycle in detail with the help of schematic representation.

Q21. a) Draw a well labelled diagram of human eye. (5)

b) Explain the types of photoreceptor cells in human eye.

**OR**

a) Draw a well labelled diagram of nephron in human.

b) How is urine formed in human

Q22. Describe the arrangement of floral members in relation to their insertion on thalamus. (5)

**OR**

What is centromere? How does the position of centromere form the basis of classification of chromosome? Draw diagram also.

**PART – II**

**(5×2=10)**

**OTBA**

Q1.a) Which system is known as second brain? Give its other 2 names. (2)

b) "Breastfeeding is crucial for infant". Explain how and give experiment conducted by researchers to support it. (3)

Q2.a) How is second brain influenced by stress? (2½)

b) How can we prevent it? (2½)