

# Final Paper (4 March 2017)

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 should be neat and properly labelled.
- iii) Part – II is of OTBA, consisting two questions of 5 marks each.

### SECTION - A

- Q1. In which form food is stored in red algae? (1)
- Q2. Mention the important function of trichomes. (1)
- Q3. Which is the most abundant protein in whole of the biosphere? (1)
- Q4. Name two amino acids that contain sulphur. (1)
- Q5. Define residual volume. (1)

### SECTION – B

- Q6. Differentiate between (2)
- a) Thalamus and Hypothalamus
  - b) Blind spot and Yellow spot
- Q7. How is mycorrhizal association helpful in absorption of water and minerals in plants? (2)
- Q8. Draw a labelled diagram showing L-S of phloem. (2)
- Q9. Give the specific scientific terms for the following: (2)
- a) Stacks of closely packed thylakoids
  - b) Stalked particles on the inner membrane of the mitochondria
  - c) Cluster of ribosomes found in cytoplasm
  - d) Extensive infoldings of the inner membrane of mitochondria

### SECTION – C

- Q10. Differentiate between: (3)
- i) Homosporous and heterosporous
  - ii) syngamy and triple fusion
- Q11.i) Write scientific names of following animals: (3)
- a) Wall lizard
  - b) Penguin
- ii) To which classes above animals belong? Write one-one peculiar feature of each class.
- Q12.i) What do you mean by periderm? (1+2)
- ii) What is phellogen? What does it produce?
- Q13. Draw a labelled diagram of alimentary canal of cockroach. (3)
- Q14. Illustrate glycosidic, peptide and a phosphodiester bond. (3)
- Q15. Describe briefly the various stages of cell cycle during the interphase preceding mitosis. (3)
- Q16. Draw a well labelled diagram of internal structure of cilia. (3)
- Q17. Describe non-cyclic photophosphorylation in plants. Why this process is called so? (3)

Q18. a) What are respiratory substrates and name the most common respiratory substrate. (1½+1½)

b) What is significance of stepwise release of energy in respiration?

Q19. Describe transpiration pull model of water transport in plants. What are the factors influencing transpiration? (2+1)

**OR**

By looking at which internal structure of a plant can you tell whether a plant is C<sub>3</sub> or C<sub>4</sub>? Explain.

Q20. a) Explain micturition

b) What is column's of Bertini in a kidney? (2+1)

#### **SECTION – D**

Q21. Mother used to keep dough in the warm weather for making some dishes. Ankit asked his mother the purpose of this. She replied that it makes the dough soft and spongy but she did not know the reason. Ankit discussed the issue with biology teacher who told that it happens due to fermentation process. (4)

Read the above passage and answer the following questions:

a) What is fermentation?

b) Name one commonly used unicellular organism employed for fermentation.

c) How is fermentation different from aerobic respiration?

d) What are other commercial products produced by fermentation?

#### **SECTION-E**

Q22. What is the full form of EMP? Describe pathway in detail with the help of schematic representation.

**OR**

i) What are the steps involved in formation of a root nodule? Explain with the help of diagram.

ii) What are the conditions necessary for fixation of atmospheric nitrogen by Rhizobium. (3+2)

Q23. a) Name the type of joint between the following:

i) between phalanges                      ii) femur/acetabulum

iii) carpel/metacarpal of thumb      iv) between cranial bones

b) Explain the sliding filament theory of mechanism of muscles contraction. (2+3)

**OR**

a) Describe the structure of sarcomere.

b) Explain the process of polarization of a nerve fibre. (2+3)

#### **PART – II**

**(5×2=10)**

#### **OTBA**

#### **Theme – 'Long Live Humanity'**

Q1.a) What is heart transplantation? (2+3)

b) What is the time period for most organs to remain healthy for transplantation after death?

Q2. Which are the two types of donors for organ transplantation? By which tests we can know that a person's brain is not working (brain death)? (5)