বিদ্যাসাগর বিশ্ববিদ্যালয়

VIDYASAGAR UNIVERSITY

B.Sc. Honours Examination 2021

(CBCS)

1st Semester

BOTANY

PAPER—C2T & C2P

BIOMOLECULES AND CELL BIOLOGY

Full Marks : 60

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

THEORY : C2T

Group – A

Answer any *three* questions. 3×12

1. Describe the basic structure of amino acid. Schematically represent the formation of peptide bond between two amino acids. Briefly describe the different levels of organisation in protein structure formation. 3+3+6

2. Describe the structure of chloroplast and mention its functions. State the function of nucleolus. 6+4+2

3. Describe in detail the prophase-I of meiosis. Compare mitosis with meiosis. Mention the importance of meiosis. 6+4+2

4. Give an account of the structure of plasma membrane in the light of fluid mosaic model. Write the functions of plant cell wall. 8+4

5. What is purine ? Mention the major N-bases of pyrimidines found in plants. Mention different forms of DNA and their major differences. What do you mean by cofactors and coenzymes ? 2+2+6+2

6. What are fats ? Classify the lipids giving examples of each. Differentiate between saturated and unsaturated fatty acids. 2+6+4

Group – B

Answer any *two* questions. 2×2

7. Write the role of microtubles.

8. What do you mean by Gibb's free energy ?

9. What do you mean by facilitated transport ?

10. What are buffers ? Name one buffer solution.

PRACTICAL : C2P

Answer any *one* question. 1×20

1. Write down qualitative tests for protein and lipid (three tests for each group of biomolecules). Mention the confirmatory tests for reducing and nonreducing sugar. 15+5

2. Briefly describe the measurement procedure of a plant cell with the help of micrometer. Write the main characters of metaphase and anaphase stages of mitosis. 15+5

3. Describe the procedure to study the phenomena of plasmolysis and deplasmolysis in plant cells. Illustrate the electron micrographic structure of Golgi bodies. 15+5

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