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I Semester B.Sc. Degree Examination, August - 2021

**BIOTECHNOLOGY**

Cell Biology, Genetics & Biochemistry

(CBCS Scheme - New Syllabus - 2020 - 21 Onwards)

Paper - I

Time : 3 Hours

Maximum Marks : 70

**Instructions to Candidates :**

- 1) All Sections are compulsory.
- 2) Draw neat labelled **diagrams** wherever necessary.

**SECTION - A**

I. Write short notes on the following.

(5×2=10)

- 1) Gregor Mendel
- 2) Application of biotechnology in human healthcare.
- 3) Active transport.
- 4) Essential amino acids.
- 5) Cofactors.

**SECTION - B**

II. Answer any **Four** of the following.

(4×5=20)

- 6) Describe law of segregation with a suitable example.
- 7) Explain the structure of mitochondrion with neat labelled diagram. Add a note on its functions.
- 8) Classify chromosomes based on the position of centromere.
- 9) Give an account of dietary sources, biological role and deficiency diseases of vitamin 'A' and 'E'.
- 10) What are hormones? Write a note on protein hormones and their functions.

**SECTION - C**


III. Answer any **Three** of the following.

(3×10=30)

- 11) What are complementary genes? Explain complementary gene interaction with reference to flower color in sweet peas.
- 12) Describe the stages of prophase - I of meiosis with labelled diagram. List the significance of meiosis.

[P.T.O.]

(2)

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- 13) Define proteins. Classify proteins with suitable examples.
  - 14) Give a detailed account of factors influencing enzyme activity.
  - 15) Explain:
    - a) Michaeli's - Menten equation.
    - b) Properties and biological importance of carbohydrates.

**SECTION - D****(10×1=10)**

IV. Answer the following in **One** word or a sentence each.

- 16) What is phenotype?
- 17) Give dihybrid cross  $F_2$  ratio.
- 18) Name any one physical mutagen.
- 19) What is dominant epistasis?
- 20) Who discovered ribosomes?
- 21) What is phagocytosis?
- 22) Who proposed fluid mosaic model of plasma membrane?
- 23) Name a disaccharide.
- 24) Expand PUFA.
- 25) Name the hormone that is called as pregnancy hormone.

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