B.Sc. Semester-II Examination, 2022-23

BOTANY [Honours]

Course ID : 21312 **Course Code : SH/BOT/202/C-4**

Course Title : Biomolecules and Cell Biology

[NEW SYLLABUS]

Time : 1 Hour 15 Minutes Full Marks : 25

The figures in the right-hand margin indicate marks.

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

UNIT–I

1. Answer any **five** of the following questions: 1×5=5

a) Name one reducing and one non-reducing disaccharide.

b) Name one selenium containing amino acid.

c) Define activation energy.

d) Name one single membrane bound organelle found in eukaryotes.

e) Write the principal difference between prokaryotic and eukaryotic cell.

f) What is mean by GERL?

g) Write the chemical composition of plant cell wall.

h) What is G_0 state in energy kinetics?

UNIT–II

2. Answer any **two** of the following questions: 5×2=10

a) Describe the Beta-pleated structure of protein. What is endergonic and exergonic reaction? 3+2=5

b) Define Michaelis-Menten constant(Km). Describe competitive and non-competitive enzyme inhibition. 2+3=5

c) Draw and label fluid mosaic model of plasma membrane. How active transport differs from passive transport? 3+2=5

d) Draw and describe the structure of nuclear pore complex. Write the role of protein kinase. 4+1=5

UNIT–III

3. Answer any **one** of the following questions: 10×1=10

a) Draw and describe the structure of B-DNA. How it differs from A and Z-DNA? 7+3=10

b) What is meant by semiautonomous nature of mitochondria? Draw and describe the structure of mitochondria with its main function. 2+3+3+2=10

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