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B.Sc./1st Sem (H)/BOTA/22(CBCS)

2022

1st Semester Examination

**BOTANY (Honours)**

Paper : C 2-T

**(Biomolecules and Cell Biology)**

[CBCS]

Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

1. Answer any **five** of the following :  $2 \times 5 = 10$

- (a) Why are mitochondria considered as semi-autonomous organelles?
- (b) What do you mean by lock and key hypothesis?
- (c) Write two main characteristic features of prokaryotic and eukaryotic cell.
- (d) What is buffer? Cite example.
- (e) Cite one example of each oligo- and polysaccharides.
- (f) What are essential fatty acids?

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(g) What is meant by protein denaturation?

(h) What is endocytosis?

2. Answer any **four** of the following :  $5 \times 4 = 20$

(a) Write the major differences between mitosis and meiosis cell division. 5

(b) What is ER? Write its structure and functions. 5

(c) Briefly describe the structure of t-RNA. 5

(d) Write differences between holo- and apo- enzyme. What are cofactors and prosthetic group?  $3+2=5$

(e) Write down the classification of carbohydrates with example. 5

(f) Discuss the structure of microtubules and microfilaments. 5

3. Answer any **one** of the following :  $10 \times 1 = 10$

(a) Briefly discuss about the cell cycle check points. Write down the structure of ATP and its role as an energy currency.  $5+5=10$

(b) Briefly discuss different levels of protein structure. Write down the function of Golgi apparatus.  $8+2=10$

