

## U.G. 1st Semester Examination - 2020

### BOTANY

Course Code : BBOTCCHC 102

Course Title: Biomolecules and Cell Biology

Full Marks : 30

Time : 2 Hours

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

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

1. Answer any **ten** questions: 1×10=10
- What are enantiomers?
  - What do you mean by amphipathic molecules?
  - Give examples of two polar uncharged amino acids.
  - What is anti-parallel  $\beta$  sheet?
  - What is 'Z' DNA?
  - What do you mean by DNA gyrase?
  - What is snRNA?
  - Define entropy.

- What is  $K_m$  value?
- What do you mean by sphingolipids?
- What is microtubule organizing centre (MTOC)?
- What are clathrin coated vesicles?
- What is chaperonin?
- What is centriole?
- What do you mean by anaphase A and anaphase B?

2. Answer any **five** questions: 2×5=10
- What do you mean by  $\beta$ -D-Glucopyranose?
  - What is sulfhydryl group? Name an amino acid in which such group can be found.
  - What do you mean by non-canonical base pairing in DNA?
  - What are lipid rafts?
  - What is Gibbs free energy? Write down the formula.
  - What do you mean by Competitive Inhibition?
  - What do you mean by GPI-anchored proteins?

h) Why mitochondria are considered as semi-autonomous?

3. Answer any **two** questions:  $5 \times 2 = 10$

a) What is facilitated diffusion? Briefly explain the mechanism of active transport in plant. 1+4

b) Write a short note on the structure of nuclear pore complex (NPC) with suitable diagram.  
3+2

c) What is signal peptide? Briefly explain the mechanism of protein targeting to the endoplasmic reticulum (ER). 1+4

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