

**P.G. 1st Semester - 2018****BOTANY****Paper : MBOTCCT104**

Full Marks : 40

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.***GROUP-A**

1. Answer any **five** of the following:  $1 \times 5 = 5$
- a) What are non-protein amino acids?
  - b) What is Ubiquitin?
  - c) Point out the nature of tertiary structure of protein.
  - d) Give the full form of SDS.
  - e) What are Genomics?
  - f) Cite an example of a weak acid.
  - g) Cite an example of inorganic salt used in precipitation for purification of protein.
  - h) What is meant by hydrophobic interactions?

2. Write short notes on any **one** of the following:  $5 \times 1 = 5$

- a) Metabolomics.
- b) Ribozymes.

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

- a) What are chaperones? Describe in brief the classes of chaperones mentioning their role in protein folding.  $2+4+4=10$
- b) What is DNA Purification? Outline the steps to Purify nucleic acids from plant Sample.  $1+9=10$

**GROUP-B**

4. Answer any **five** questions:  $1 \times 5 = 5$
- a) Define genomic imprinting.
  - b) What do you mean by 'semiautonomous organelle'?
  - c) What are porin proteins?
  - d) In eukaryotes, which DNA polymerase help to synthesize the lagging strand of DNA.
  - e) Write down the "Nernst Equation".

*[Turn Over]*

- f) What do you mean by caveolin?
- g) What is the functional speciality of an antiporter?
- h) What do you mean by “Histone code”?

5. Answer any **one** question:  $5 \times 1 = 5$

- a) Role of G-protein and G-protein coupled receptors (GPCR).
- b) Write short notes on different transcriptional activators in eukaryotes.

6. Answer any **one** question:  $10 \times 1 = 10$

- a) With suitable diagram briefly describe the regulation of gene expression in prokaryotes. What are snRNPs?
  - b) What is positive supercoiling of DNA molecule? Explain briefly the mechanism of base excision repair. How does RNAi (RNA mediated gene silencing) help in crop improvement.  $1 + 5 + 4 = 10$
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