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3(Sem 2) BOT M2

2015

BOTANY

(Major)

Theory Paper : 2.2

(Cell Biology)

Full Marks – 60

Time – 2½ hours

The figures in the margin indicate full marks for the questions.

1. Answer the following : 1×7=7
- (a) What is the origin of Golgi apparatus ?
 - (b) What is endomitosis ?
 - (c) What are mesosomes ?
 - (d) What are palindromic sequences ?
 - (e) What function mitogens serve ?
 - (f) What are porins ?
 - (g) What is the function of telomere ?

[Turn over

2. Answer the following : $2 \times 4 = 8$

- (a) Discuss the role of oligosaccharides present in the cell membrane.
- (b) Distinguish between phagosome and heterophagosome.
- (c) What is quiescent phase of cell cycle ?
- (d) What are voltage-gated channels ?

3. Answer any *three* of the following : $5 \times 3 = 15$

- (a) Describe the ultrastructure of endoplasmic reticulum.
- (b) Write a brief note on DNA polymorphism.
- (c) Explain the molecular mechanism of GPCR for initiation of cell signalling.
- (d) Explain the flow of intrinsic informations in a cell.
- (e) What are histones ? State functions of histon protein.

4. Answer any *three* of the following :

- (a) Describe different kinds of modification that occur to the cell membrane. 10
- (b) Describe different types of special chromosome found in organisms along with their functions. 10
- (c) Discuss the autocatalytic function of DNA. Enlist the enzymes involved in the process. $7 + 3 = 10$
- (d) What are the different types of endocytosis pathway ? Describe the principal components of endocytic pathway. $5 + 5 = 10$
- (e) What are signal peptides ? Explain the mechanism of post translational translocation of proteins. $2 + 8 = 10$
- (f) What are cell cycle check points ? Describe molecular control mechanisms at each of the checkpoints. $2 + 8 = 10$