Total No. of printed pages = 3

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 ?

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2. Answer the following : 2×4=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 : 5×3=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