2016/ODD/09/28/BTY–102/383

PG Odd Semester (CBCS) Exam., December—2016

BIOTECHNOLOGY

(1st Semester)

Course No. : BTYCC–102

(Cell Biology)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. *(a)* Discuss in detail the structure and functions of mitochondria and endoplasmic reticulum. 7

(b) Discuss the operation of a compound microscope. 5

(c) Describe the term 'magnification'. 2

OR

2. *(a)* Discuss in detail the structure and functions of cilia and flagella. 7

(b) Define the terms 'microscopy' and 'micrometry'. 2+2=4

(c) Write a short note on cytometer. 3

3. *(a)* Discuss the 'Fluid Mosaic Model' of membrane structure. 7

(b) Discuss the mechanism of G-protein-mediated cell signaling with appropriate example. 7

OR

4. *(a)* Discuss the mechanism of signal transduction in rhizobium-legume symbiosis. 7

(b) Describe in detail how plants respond to diverse environmental signals. 7

5. *(a)* What are CAMs? Discuss their importance in the context of cell organization. 7

(b) What do you mean by cell lineage? Discuss how cell lineage is determined. 7

OR

6. Write short notes on the following : 5+5+4=14

(a) Cadherins

(b) Extracellular matrix

(c) Extravasation across epithelium

7. *(a)* What are growth factors? Write a note on the role of growth factor VEGF and its significance in cancer. 2+7=9

(b) What do you understand by the loss of anchorage dependence and loss of contact inhibition of transformed cells? 5

OR

8. *(a)* Discuss the role of FAS ligand in apoptosis. 7

(b) What is cancer? Discuss the etiology of cancer. 2+5=7

9. *(a)* Describe the structure of the plant cell wall with the help of a suitable diagram. 7

(b) What are plastids? Discuss the structure and biogenesis of plastids. 7

OR

10. *(a)* What are plasmodesmata? Discuss their role in virus transfer. 2+5=7

(b) Write short notes on the following : 3½×2=7

(i) Rubisco

(ii) Chloroplast

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