PG Even Semester (CBCS) Exam., May—2017

BIOTECHNOLOGY

(2nd Semester)

Course No. : BTYOC–203

(Fundamentals of Biotechnology)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. *(a)* What is glycolysis? Enumerate the steps of the glycolytic pathway indicating the steps crucial for the regulation of glycolysis. 2+6+2=10

(b) What is cell death? 4

OR

2. Write briefly on the following : 5+5+4=14

(a) Protoplast culture

(b) Maintenance of cell lines in culture

(c) Cell-cell interaction

3. *(a)* Discuss the importance of microbes in agriculture with special reference to molecular mechanism of nitrogen fixation. 7

(b) Discuss the morphology and ultrastructure of viruses. 7

OR

4. *(a)* What is autoimmunity? Discuss the pathogenesis of autoimmune thyroid disorders. 2+7=9

(b) Discuss the role of MHC–II in antigen presentation. 5

5. Write briefly on the importance of the following : 3+3+3+3+2=14

(a) Proofreading activity of DNA polymerase

(b) Amino-acyl tRNA

(c) Shine-Dalgarno sequence

(d) Polyadenylation of mRNA

(e) Non-coding RNA

OR

6. *(a)* Discuss the mechanism of translation in eukaryotes. 7

(b) Write a note on protein transport. 7

7. Write briefly on the following : 4+5+5=14

(a) Sex determination

(b) Linkage and crossing over

(c) Application of genetics in human life

OR

8. *(a)* What is Mendelism? Discuss the significant contributions of Gregor Johann Mendel to the field of genetics. 2+5=7

(b) Name any two mutagenic agents. Discuss how they induce mutations. 2+5=7

9. *(a)* What do you mean by vectors? Discuss in detail the structural features of two different vectors. 2+4+4=10

(b) Write a note on GMOs. 4

OR

10. Discuss the construction and applications of genomic libraries and cDNA libraries. 14

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