PG Even Semester (CBCS) Exam., May—2018

BIOTECHNOLOGY

(Open Course)

(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)* Discuss the requirements for maintenance of cell lines. 10

(b) Write a note on cell differentiation. 4

OR

2. *(a)* Discuss the steps involved in the fatty acid synthesis. 10

(b) What are the end products of -oxidation of a 16-carbon saturated fatty acid? 4

3. *(a)* Write different methods of horizontal gene transfer in bacteria. 7

(b) Write the method of gene regulation with the help of Operon concept. 7

OR

4. *(a)* What is hypersensitivity? Distinguish between different types of hypersensitivity reactions. 2+8=10

(b) How is antibody diversity generated? 4

5. Describe the mechanism of protein synthesis in prokaryotes. 14

OR

6. What are non-coding RNAs? Explain the biogenesis of miRNA in detail. 2+12=14

7. *(a)* What are multiple alleles? Discuss the characteristics of multiple alleles. 2+5=7

(b) Write a note on ABO blood group system, showing the role of multiple alleles in determining blood group phenotypes. 7

OR

8. *(a)* Define mutagenesis and discuss the characteristics of mutations. 2+4=6

(b) Write a note on how chemical mutagens induce mutations. 8

9. *(a)* Discuss the strategies adopted for cloning in genetic engineering. 7

(b) Describe plasmid vector and BAC. 7

OR

10. *(a)* What are transgenic plants? Discuss the applications of GMOs. 3+7=10

(b) Write a note on biofuel. 4

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