PG Even Semester Examination, September, 2023

BIOTECHNOLOGY

(4th Semester)

Course No: BTYCC-403
(Industrial Biotechnology, Molecular Immunology and Immunotechnology)

FM: 70
Pass Marks : 28
Time: 3 Hours

The figures in the right margin indicate full marks for the question

1. (a) Write a brief account on : 3.5x2=7

   (i) Application of enzymes in industry

   (ii) Enzyme immobilization

   (b) Write a note on : 7

   Production, Optimization, Screening and Strain development in microbial processes

Or

2. (a) Write short notes with examples on : 3.5x2=7

   (i) Microbial production of antibiotics

   (ii) Microbial production of organic acids

(b) Give a short account on microbial production of food, feed and therapeutics. 7

3. (a) State the characteristics of industrial effluents. 6

(b) What is bioremediation? Give the conventional tratments of industrial effluents. 2+6=8

Or

4. (a) Differentiate between aerobic and anaerobic treatments of industrial waste. 7

(b) Write a brief note on the role of GMOs in environmental protection. 7

5. Write short notes on : 7+7=14

(i) Pre-B-cell

(ii) Src Kinases

(iii) Receptor editing

(iv) Affinity maturation

Or

6. (a) Describe the cell signaling in B-cell maturation. 7

(b) Briefly state the role of molecular mimicry in inducing autoimmunity. 7

7. Differentiate between traditional and reverse vaccinology. Explain how reverse vaccinology can be used for development of vaccines against pathogens for which traditional vaccines cannot be developed. 6+8=14

Or

8. Discuss the following : 7x2=14

(i) Animal models used in immunology

(ii) Chimeric antibodies and their applications

9. Write a brief note on production of DNA vaccines. 14

Or

10. Write an account on the manufacturing of immuno-diagnostics. 14

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