

GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – VI • EXAMINATION – WINTER • 2016

Subject Code: 260002**Date: 21-10-2016****Subject Name: Pharmaceutical Microbiology and Biotechnology - II****Time: 02:30 pm - 05:30 pm****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

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| Q.1 | (a) What is gene cloning? Describe gene cloning by restriction endonuclease. | 06 |
| | (b) Discuss scope of biotechnology. | 05 |
| | (c) Write a detailed note on Transformation. | 05 |
| Q.2 | (a) What is mutation? Enlist types of mutation. Write a note on mutagens. | 06 |
| | (b) Write a short note on Replica plate method to identify the mutants. | 05 |
| | (c) Write a note on humulin. | 05 |
| Q.3 | (a) Differentiate: (i) Active and Passive Immunity (ii) Toxin and Toxoid | 06 |
| | (b) Classify vaccines. Write a note on production of live bacterial vaccine. | 05 |
| | (c) Write a note on Schick test. | 05 |
| Q.4 | (a) Write a note on Immunoglobulins. | 06 |
| | (b) Comment : (i) Second line defense is nonspecific defense.
(ii) TAB is mixed polyvalent vaccine. | 05 |
| | (c) Write a note on serological reactions. | 05 |
| Q.5 | (a) Draw well labeled diagram of a fermenter. Describe its parts in brief. | 06 |
| | (b) Discuss upstream processing for fermentation of Penicillin. | 05 |
| | (c) Discuss downstream processing of fermentation on Vitamin B ₁₂ . | 05 |
| Q. 6 | (a) Comment: (i) Liquid media is preferred in large scale fermenters.
(ii) Seed culture is used for large scale fermentation. | 06 |
| | (b) What is importance of primary and secondary screening in fermentation?
Describe any one of primary screening method. | 05 |
| | (c) Give flow sheet for production of streptomycin by fermentation. | 05 |
| Q.7 | (a) What is immobilization of enzymes? Give its advantages and applications. | 06 |
| | (b) Enlist techniques of Immobilization of enzymes. Discuss any two in detail. | 05 |
| | (c) Discuss factors affecting enzyme kinetics. | 05 |
