

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

Subject Code: 2280015**Date: 02-12-2016****Subject Name: Genetic Engineering and Gene Therapy****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 central dogma of life? Explain in detail transcription control with a suitable diagram. | 06 |
| | (b) | Explain gene organization in cell. | 05 |
| | (c) | What is RNA splicing? | 05 |
| Q.2 | (a) | Enlist enzymes used in molecular modification. Explain different types of enzyme known as “molecular scissors”. | 06 |
| | (b) | Explain method used for extracting genomic DNA from whole blood. | 05 |
| | (c) | Write a note on gel electrophoresis. Give its applications in genetic engineering. | 05 |
| Q.3 | (a) | What is PCR? Explain PCR cycle in detail. Give its applications. | 06 |
| | (b) | Write short note on radio labeling of nucleic acid. | 05 |
| | (c) | Explain adapters and linkers used in genetic engineering. | 05 |
| Q.4 | (a) | Explain synthesis of cDNA. | 06 |
| | (b) | Write in detail about gene cloning with neat labeled diagram. | 05 |
| | (c) | Write a note on transformation. | 05 |
| Q.5 | (a) | What is vector? Give its characteristics. Explain cosmid as a vector with neat labeled diagram. | 06 |
| | (b) | Explain in detail southern blotting technique. | 05 |
| | (c) | Write a note on Automatic DNA sequencer. | 05 |
| Q. 6 | (a) | Write a note on antisense- oligonucleotide therapy. | 06 |
| | (b) | What is DNA vaccine? | 05 |
| | (c) | Applications of r-DNA technology in treatments of medical conditions. | 05 |
| Q.7 | (a) | Explain the method of DNA fingerprinting. Give its applications. | 06 |
| | (b) | Enlist and explain methods of gene transfer. | 05 |
| | (c) | Write short note on gene therapy for cancer. | 05 |
