Code No: RR312302 **Set No.1**

III B.Tech. I Semester Regular Examinations, November -2005
GENETIC ENGINEERING
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the role of DNA binding proteins in Gene regulation. [8+8]
2. Describe the mechanism of gene regulation in eukaryotes with a suitable example. [6+10]
3. Explain the mechanism of transposition. [4+12]
4. Give the methods of isolation and purification of DNA from plant systems. [6+10]
5. Write the steps involved in the construction of a cDNA library. [4+12]
6. Compare and contrast between PCR and RT PCR. [8+8]
7. What is gene mapping? Explain the role of restriction enzymes in it. [6+10]
8. Discuss about the strategies used to produce transgenic animals. [6+10]

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Code No: RR312302 **Set No.2**

III B.Tech. I Semester Regular Examinations, November -2005
GENETIC ENGINEERING
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the role of DNA binding proteins in Gene regulation. [8+8]
2. How is tissure specific gene regulation achieved in eukaryotes? [6+10]
3. What are artificial plasmids? How can they be produced? [6+10]
4. Describe different cloning vectors used in gene cloning. [8+8]
5. Explain nucleic acid hybridization and its uses as a screening procedure. [6+10]
6. Explain the role of PCR in Forensic Science. [4+12]
7. Write short notes on any two:
   (a) Satellite markers
   (b) Restriction enzymes
   (c) Gel electrophoresis. [8+8]
8. Explain the importance of gene cloning in agriculture. [4+12]

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Code No: RR312302 **Set No.3**

III B.Tech. I Semester Regular Examinations, November -2005
GENETIC ENGINEERING
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Differentiate between positive and negative control in lac operon. [8+8]
2. Explain the expression of hormone regulated genes in eukaryotes [6+10]
3. Write notes on any two:
   (a) Relaxed plasmid
   (b) PUC8
   (c) α - Complementation. [8+8]
4. Write notes on any two:
   (a) M13 vectors
   (b) Cosmids
   (c) PUC8 [8+8]
5. Discuss in detail the nucleic acid blotting techniques used in detection of cloned genes. [6+10]
6. (a) Write about primer designing in PCR.
   (b) Which DNA polymerase is used in PCR? [8+8]
7. Explain the role of microarray and gene chips in disease profiling. [6+10]
8. Explain the importance of gene cloning in medicine. [4+12]

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Code No: RR312302 **Set No.4**

III B.Tech. I Semester Regular Examinations, November -2005
GENETIC ENGINEERING
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain how lac operon genes are regulated. [6+10]
2. What is signal transduction? How does it help in regulating gene expression? [4+12]
3. Write an account on any two:
   (a) Multiple cloning sites
   (b) Shuttle vectors
   (c) PJDB219 plasmid vector [8+8]
4. Write detailed account on restriction mapping and its importance. [4+12]
5. Discuss about the screening strategies in a cDNA or a genomic library. [4+12]
6. Write short notes on any two:
   (a) Primers in PCR
   (b) Taq polymeraoe in PCR
   (c) cDNA. [8+8]
7. How are repeated sequences used as molecular markers? [6+10]
8. Discuss about the viral methods used in doing In vivo gene therapy. [4+12]

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