Code No: 09A52304 **R09** **Set No. 2**

III B.Tech I Semester Examinations,December 2011
GENETIC ENGINEERING
Bio-Technology

Time: 3 hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. Write short notes on colE1plasmid and pBR327. [15]
2. Write short notes on:
   (a) Homopolymer tailing
   (b) Physiological significance of restriction & modification system. [7+8]
3. Comment on:
   (a) Application of Homopolyer Tailing in cDNA cloning.
   (b) Subtractive cloning. [15]
4. Explain the advantages & disadvantages of chemical degradation method. [15]
5. Explain the organization of the lac operon & other genes involved with lactose metabolism in E.coli. [15]
6. Write short notes on
   (a) Problems encountered in PCR & their solutions.
   (b) Application of PCR in modern molecular biology. [7+8]
7. Write about transgenic animals as bioreactors for the production of therapeutically important proteins. [15]
8. Discuss the significance of photolabile protecting groups in the manufacture of DNA chips. Give two examples of photosensitive groups. [15]

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Code No: 09A52304 **R09** **Set No. 4**

III B.Tech I Semester Examinations,December 2011
GENETIC ENGINEERING
Bio-Technology

Time: 3 hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. Briefly describe gene knock out & its applications. [15]
2. Mention the properties, a plasmid should possess for its use in recombinant DNA. [15]
3. Write the principle & procedure of ultrasonication. [15]
4. How is PCR useful in medical diagnosis & forensic science. [15]
5. Write about AFLP primers and adaptors. What are the advantages of AFLP. [15]
6. Explain the synthesis of cDNA using oligo G primer. [15]
7. Write about regulation of araBAD operon. [15]
8. Discuss the role of restriction enzymes in restriction mapping. Discuss the significance of double digestion in the process. [15]

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Code No: 09A52304 **R09** **Set No. 1**

III B.Tech I Semester Examinations,December 2011
GENETIC ENGINEERING
Bio-Technology

Time: 3 hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. Write a short notes on:
   (a) Application of linkers and adaptors in cDNA cloning.
   (b) Vectors used for cDNA cloning. [15]
2. Discuss the basic principle involved in PCR technique in detail. [15]
3. Define recognition sites and explain their properties. [15]
4. Define gene therapy. Explain in detail ex- vivo gene therapy and its application. [15]
5. Discuss in detail the prokaryotic promoters. [15]
6. Write short notes on:
   (a) Nucleotide analogs.
   (b) Sequencing gel. [15]
7. Discuss the variants of RAPD in detail. [15]
8. Explain the mechanism of transposition and excision. [15]

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Code No: 09A52304 **R09** **Set No. 3**

III B.Tech I Semester Examinations,December 2011
GENETIC ENGINEERING
Bio-Technology

Time: 3 hours **Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

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1. Write about complementations or suppression of mertant phenotype in the cloning cell or selection of recombinant-deficient phages. [15]
2. What are DNA micro chips? Write about support media & the strategies adopted for cross linking & immobilization of DNA on the surface of support media. [15]
3. Enumerate the factors that affect the PCR reaction at various steps. [15]
4. Explain the principle & steps involved in gel retardation assay. [15]
5. Write about
   (a) T7 DNA polymerase and its applications
   (b) Polynucleotide kinase and its applications. [15]
6. Classify plasmids based on size, copy number and function in detail. [15]
7. Discuss in detail gene delivery by non-viral systems. [15]
8. Discuss control of transcription termination in prokaryotes. [15]

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