Code No: R09222303 **R09** **Set No. 2**

II B.Tech II Semester Examinations,APRIL 2011
MOLECULAR BIOLOGY AND GENETICS
Bio-Technology

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

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Write short notes on:
   (a) Properties of nonsense mutation.
   (b) Chain termination codon. [7+8]
2. Briefly describe the structure of RNA molecules. [15]
3. Describe the structure of t RNA in prokaryotes. [15]
4. Describe two examples where temperature & light could alter the expression of a genotype. [15]
5. What are polymeric chromosomes? How are they formed? What is the utility of these chromosomes in cytogenetical studies? [15]
6. Define crossing over. Explain cytological evidences of crossing over. [15]
7. Write in detail the organization of mitochondrial genomes. [15]
8. Lysogeny is maintained by an autogenous circuit. Explain. [15]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R09222303 **R09** **Set No. 4**

II B.Tech II Semester Examinations,APRIL 2011
MOLECULAR BIOLOGY AND GENETICS
Bio-Technology

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

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Describe translational termination in eukaryotes & how does it differ from prokaryotes. [15]
2. Explain euchromatin & heteochromatin in detail. [15]
3. Describe the various classes of non mendelian inheritance. [15]
4. Discuss in detail the molecular basis of mutations. Add a note on application of mutations. [15]
5. Explain the transcription units for RNA polymerase I. [15]
6. Comment on:
   (a) Interrupted mating.
   (b) Rapid mapping by conjugation. [7+8]
7. If you are given the percentage of Neurospora asci showing second division segregation, how can you calculate the map distance of the gene from the centromere. [15]
8. Discuss taylor's experiment illustrating semi conservative segregation of chromatids in eukaryotic chromosomes. [15]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R09222303 **R09** **Set No. 1**

II B.Tech II Semester Examinations,APRIL 2011
MOLECULAR BIOLOGY AND GENETICS
Bio-Technology

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

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Write short notes on:
   (a) Epistasis & blood groups in man.
   (b) Dihybrid cross. [8+7]
2. Discuss briefly about spontaneous mutations. [15]
3. Discuss grafting experiment in Acetabularia & genetic basis of incompatibility in Mosquitoes. [15]
4. (a) What are DNA topoisomerases what is the role of these enzyme in transcription?
   (b) How does transcription machinery shift from initiation to elongation mode? [8+7]
5. What is wobble Hypothesis? How does this Hypothesis explain economy in the use of t RNAS? [15]
6. Enumerate the theories of chromosomal crossing over. [15]
7. A second repressor is needed for lytic infection. Explain. [15]
8. Briefly explain the organization of replicon, & describe the different variations in the generalized model for DNA replication. [15]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R09222303 **R09** **Set No. 3**

II B.Tech II Semester Examinations,APRIL 2011
MOLECULAR BIOLOGY AND GENETICS
Bio-Technology

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

Answer any FIVE Questions
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. Comment on:
   (a) Hershey case experiment.
   (b) Avery MCleod experiment. [8+7]
2. Explain in detail morgan's concept of linkage. [15]
3. Describe the nucleosome- solenoid model of chromatin fiber organization. [15]
4. Describe the characteristics of prokaryotic & eukaryotic chromosomes. [15]
5. Discuss the mechanism for DNA gyrase activity. [15]
6. (a) What are unmixed & mixed families of codons?
   (b) Define the terms reading frames, universality of code, degenerate code & ambiguous code. [6+9]
7. Write in detail the molecular mechanism of transformation. [15]
8. What is variegation? Illustrate it giving the example of Mirabilis jalapa. [15]

⋆ ⋆ ⋆ ⋆ ⋆