

BSc III YEAR V – SEMESTER
Molecular biology and rDNA technology
QUESTION BANK

Unit-I

Essay Answer Type

1. Explain about transcription mechanism in prokaryotes.
2. Describe the prokaryotic gene structure.
3. What is genetic code and explain its characteristics.
4. Explain the concept of lac operon.
5. Write briefly the mechanism of translation in prokaryotes.
6. Write about arabinose operon.

Short answer type

1. Describe about positive and negative control of gene regulation
2. Wobble hypothesis
3. Reverse transcription
4. Rho dependent & rho independent termination
5. Functions of RNA polymerase
6. Aminoacylation

Unit-2

Essay Answer Type

1. Write about transcriptional machinery & transcription factors of eukaryotes.
2. Explain post translational modifications in eukaryotes.
3. Explain translation process in eukaryotes.
4. Describe the mechanism of transcription in eukaryotes.
5. Explain about eukaryotic gene structure.
6. Explain gene regulation in eukaryotes. Example: mating types in yeast.

Short answer type

1. Polyadenylation
2. Alternate splicing
3. Exons & introns
4. Self-splicing
5. Eukaryotic transcription factors
6. Upstream & regulatory elements

Unit-3

Essay Answer Type

1. Describe the enzymes used in rDNA technology.
2. Explain about different types of cloning vectors.
3. Gene transfer techniques: physical, chemical & biological methods.
4. Write briefly about western & southern blotting.
5. What is polymerase chain reaction? & its various applications.
6. Explain applications of rDNA technology in agriculture & medicine.

Short answer type

1. Reverse transcriptase & DNA polymerase-I
2. pBR322, shuttle vectors
3. Northern blotting
4. Phagemid vectors
5. DNA ligase, terminal nucleotidyl transferase
6. Zoo blotting
7. PCR application
8. rDNA technology in medicine
9. Golden rice and Bt cotton