

BT – 408 :Molecular Biology and Genetic Engineering

Instruction: All the questions carries equal marks.

Q – 1 Answer **any two** of the followings. (14)

- (a) Describe organization of genome in eukaryotic cell.
- (b) Explain initiation and termination of transcription.
- (c) Discuss in detail the excision repair mechanism.
- (d) Define mutation and explain the mechanism of physical mutagens on microorganisms.

Q – 2 Attempt **any two** of the followings. (14)

- (a) Write a note on 'Tryptophan operon'.
- (b) Explain control mechanism of Lac operon.
- (c) Describe the role of repressor protein in lysogeny.
- (d) Discuss attenuated control of gene regulation in bacteria.

Q – 3 Attempt **any two** of the followings. (14)

- (a) Write a short note on 'Restriction endonucleases'.
- (b) Explain Maxam and Gilbert method of DNA sequencing.
- (c) Describe the principle and method of sothern blotting.
- (d) Write a note on protein microarray technique.

Q – 4 Attempt **any two** of the followings. (14)

- (a) Write a note on plasmids as vectors.
- (b) Write a note on sequence based metagenomics.
- (c) Explain shot gun clone libraries.
- (d) Discuss the applications of r-DNA technology.

Q – 5 Write in short on **any seven** of the followings. (14)

- 1) Nonsense codon
- 2) C-Value paradox.
- 3) Write on subunits of RNA polymerase enzyme.
- 4) SOS repair
- 5) Give schematic diagram of Northern blotting
- 6) Electroporation
- 7) What is translational control?
- 8) *Taq* polymerase
- 9) Draw a figure of pUC18.
- 10) c-DNA library