

Roll No. ....

Total Pages : 2

**10216**

**LMDE/M-24**

**MICROBIAL GENETICS & MOLECULAR**

**BIOLOGY II**

**Paper–MMB-202**

Time : Three Hours]

[Maximum Marks : 80

**Note :** Attempt *five* questions in all, selecting *one* question from each unit and compulsory question 1.

**Compulsory Question**

**1.** Explain/define/comment.

- (a) Alternate sigma factors.
- (b) Role of different subunits of RNA polymerases.
- (c) Alternative splicing.
- (d) RNA interference.
- (e) Peptidyl transferase.
- (f) Elongation factors during translation in prokaryotes.
- (g) Role of ppGpp in stringent response.
- (h) Attenuator in trp operon. (2×8=16)

**UNIT-I**

**2.** Describe similarities and differences between process of replication and transcription Describe mechanism of termination of transcription with or without help of rho protein. (2×8=16)

3. Write down overview of process of transcription in eukaryotes Describe the general structure of promoter in prokaryotic gene. (2×8=16)

#### UNIT-II

4. Write a note on post transcriptional processing for generating mature tRNA Describe CRISPR Cas system for editing genomes. (2×8=16)
5. Describe the mechanism of splicing by spliceosomes Describe the mechanism of 5' capping and 3' poly A tailing during mRNA processing. (2×8=16)

#### UNIT-III

6. Describe different experimental approaches followed for deciphering of genetic code. Explain the mechanism of charging of tRNA. (2×8=16)
7. Write an overview of post translational modifications. Write a note on translation in eukaryotes. (2×8=16)

#### UNIT-IV

8. What do you understand by constitutive and inducible genes? Describe positive regulation in lac operon Describe significance of glucose effect. (2×8=16)
9. Describe in detail the regulation of expression of arabinose operon. (16)
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