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Roll No. ..... **Total Pages : 02**

OCMDE/M-20 4740

MOLECULAR GENETICS

BOT-204

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1. Write about the following : **8×2=16**

(i) C-value paradox (ii) Minisatellites

(iii) Replication fork (iv) Photoreactivation

(v) Capping (vi) RNA polymerases

(vii) Attenuation (viii) Spliceosome.

Unit I

2. Describe the transposable elements in bacteria. Discuss about replicative and conservative transposition. **10+6**

3. What are the enzymes involved in DNA replication ? Discuss the replications process in eukaryotes. **4+12**

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Unit II

4. What cellular mechanisms causes DNA damage ? Describe excision repair mechanism. **4+12**

5. What are the causes of mutations ? Describe the three types of mutations and their effects on the cell. **4+12**

Unit III

6. Describe the process of RNA splicing. What is the difference between autocatalytic splicing and alternative splicing ? **10+6**

7. What is the significance of post translational modification of proteins (PTM) ? Discuss, how PTM is brought about by photophorylation, glycosylation and ubiquitination ? **4+12**

Unit IV

8. Discuss the control of gene expression in eukaryotes. **16**

9. Write about the following : **8+8**

(a) Tryptophan operon

(b) Nucleosome positioning.

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