Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(BT) (2011 onwards) (Sem.–4)

CELL & MOLECULAR BIOLOGY

Subject Code : BTBT-404

Paper ID : [A1169]

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

Q1 Answer briefly :

a) Distinguish between chromatin and chromosome.

b) What is C-value paradox?

c) What is Wobble's Hypothesis?

d) Mention any two functions of Lysosome.

e) State one gene and one enzyme Hypothesis.

f) Define Translation.

g) State Chargaff's Law.

h) Explain the semi-conservative replication of DNA.

i) What is a promoter?

j) Define endocytosis.

SECTION-B

Q2 Write short notes on **any two** of the following :

a) Molecular mechanism of DNA replication

b) Genetic Code

c) Role of Ribosomes in protein synthesis.

Q3 Briefly describe the process of gametogenesis in humans.

Q4 Comment on the salient features of prokaryotic and eukaryotic replicons.

Q5 Elaborate both positive and negative regulations of *lac* operon with diagram.

Q6 How are bacterial genomes different from genomes of multicellular eukaryotes?

SECTION-C

Q7 What is the principle of PCR? Describe the steps involved in PCR and the importance of various parameters.

Q8 What is the role of DnaA, Dna B, Dna C, and Dna G proteins in the initiation of replication in *E.coli*?

Q9 Describe the process of translation initiation in bacteria.