

Roll No.

--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 18

B.Tech.(BT) (2012 to 2017) (Sem.-4)

CELL & MOLECULAR BIOLOGY

Subject Code : BTBT-404

M.Code : 55087

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**Answer briefly :**

1. What are the properties of DNA polymerases?
2. Write the termination codons. What is the importance of termination codon?
3. What is the role of sigma factor in bacterial transcription?
4. Differentiate between euchromatin and heterochromatin.
5. What are the enzymes and proteins involved in the initiation of DNA replication in prokaryotes?
6. What is the importance of DNA methylation in *E. coli* genome replication and repair?
7. Describe excision based repair system.
8. Explain the semi-conservative replication of DNA.
9. What is a promoter?
10. Define endocytosis.

SECTION-B

11. Using suitable diagrams describe Okazaki fragments. How are Okazaki fragments joined in eukaryotes and prokaryotes.
12. Define polymerization rate, processivity and proof reading activity of DNA polymerase.
13. Explain the different DNA repair mechanisms.
14. Write short notes on **any two** :
 - a) Telomerase and its significance
 - b) Cot curve and its significance
 - c) Structure and function of Microtubules
 - d) Properties of Genetic code
15. How are bacterial genomes different from genomes of multicellular eukaryotes?

SECTION-C

16. What is the principle of PCR? Describe the steps involved in PCR and the importance of various parameters.
17. Differentiate between Meiosis and Mitosis and describe the process of meiosis during oogenesis in humans.
18. Give the different phases of cell cycle and write a note on cell cycle check points.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.