

B.E/B.TECH DEGREE EXAMINATIONS, DECEMBER 2020

Fifth Semester

BT18503 – MOLECULAR BIOLOGY

(Regulation 2018)

Time: Three Hours

Maximum : 80 Marks

Answer **ALL** questions**PART A - (8 X 2 = 16 Marks)**

1. In DNA _____ after melting is slow
 - A. Denaturation
 - B. Extension
 - C. Renaturation
 - D. None of the above
2. The correctness of the semi conservative model was demonstrated by the _____ experiment
 - A. Avery, mcleod and mccarty
 - B. Griffith
 - C. Meselson & Stahl
 - D. Harshey and chase
3. Quinolones or fluoroquinolones are present, _____ is inhibited and cannot reseal the DNA strands
 - A. Polymerase
 - B. DNA gyrase
 - C. Topoisomerase I
 - D. Primase
4. Which site of tRNA molecules hydrogen bonds to a mRNA molecule
 - A. Codon
 - B. Anticodon
 - C. 5' end of mRNA molecule
 - D. 3' end of mRNA molecule
5. Develop the role of topoisomerase enzyme with respect to DNA supercoiling.
6. Inspect on fragments formed during replication in lagging strand.
7. Discover the role of transcription inhibitors on various molecular aspect level.
8. Estimate the proteins of prokaryotic ribosome in translation.

PART B - (4 X16 = 64 Marks)

09. (a) Inference on the experiments which proves DNA is the genetic material for the transfer of genetic information between generation. (16)

(OR)

- (b) Analyze the Looped mode of replication which happens like the letter D and and covalent extension mode of replication that occurs by rolling. (16)

10. (a) Estimate the molecular level activities of mRNA, rRNA and tRNA that is produced by transcription with its structure and functions. (16)

(OR)

- (b) Compare the process of prokaryotic and eukaryotic transcription based on transcription unit, factors and elements. (16)

11. (a) Apply logic of total number of aminoacids and nitrogenous bases of RNA to elucidate genetic code and the concept of codon degeneracy. (16)

(OR)

- (b) Organize the translation process based on IF, EF and RF factors. (16)

12. (a) Inspect the protein produced by translation and give the importance of post translational modifications and its importance to produce functional protein. (16)

(OR)

- (b) Test for on or off for the production of lactose and tryptophan at gene level assisted by enzymes and genes in operon. (16)