

B.E/B.TECH Degree Examinations, December 2020
Fifth Semester
BT16504 – MOLECULAR BIOLOGY
(Regulation 2016)

Time: Three Hours

Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 Marks)

1. Which of the following act as the blueprint or template for the process of protein synthesis that takes place on ribosomes?
 - A. rRNA
 - B. DNA
 - C. tRNA
 - D. mRNA
2. Site in the ribosome from which the tRNA donates amino acids to the growing polypeptide chain is
 - A. P site
 - B. O site
 - C. T site
 - D. A site
3. What are the Svedberg values for the subunits of the 70S ribosomes of *E. coli*?
 - A. 40S and 30S
 - B. 50S and 20S
 - C. 50S and 30S
 - D. 40S and 20S
4. Which of the following three codons translate as serine (Ser)?
 - A. AGU
 - B. CGA
 - C. CAU
 - D. AUG
5. Compare the classes of DNA and their prevalence's.
6. Analyze the DNA polymerase control on fidelity of replication.
7. Organize the difference between prokaryotic and eukaryotic promoters.
8. Construct codon usage pattern or codon preference.

PART B - (4 X 16 = 64 Marks)

09. (a) Identify the forces stabilizing DNA structure. (16)
(OR)
(b) Develop the structure and physicochemical properties of elements in DNA and RNA. (16)
10. (a) Assess the semi conservative model of DNA replication. The experiment which was used to confirm the above mechanism. (16)
(OR)
(b) Explain how damages caused to DNA is repaired by excision recombination and by other methods. (16)
11. (a) Distinguish synthesis of RNA by transcription in prokaryote and eukaryote. (16)
(OR)
(b) Simplify the proteins of RNA synthesis and characteristics of promoter, enhancer sequences. (16)
12. (a) Evaluate post translational modification? Briefly discuss the post translational modification undergone by secreted and membrane associated proteins. (16)
(OR)
(b) Determine positive and negative regulation of operons with suitable examples. (16)