QP Code:RM22BTECH161 | Reg. No | | | | | | | | | | | AY 22

GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Fourth Semester Regular) Examinations, May – 2024

22BBTPC24001- Molecular Biology

(Biotechnology)

Time: 3 hrs | Maximum: 70 Marks

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. Draw the structural association of DNA with histones.	CO1	K4
b. How can you repair the thymine dimer in direct DNA repair system?	CO2	K3
c. Draw the structure of pribnow box and write its function.	CO3	K4
d. Sketch and labelled the structure of t-RNA.	CO4	K4
e. Define genetic code. Write the names of stop codon.	CO4	K1

PART – B **(15 x 4=60 Marks)**

Answer ***ALL*** questions	Marks	CO #	Blooms Level
2. a. Explain the model for the packaging of DNA into chromatin with suitable diagram?	8	CO1	K2
b. Discuss the detail conclusion and experiment conducted by Avery, MacLeod and McCarty for DNA as the genetic material?	7	CO1	K2
(OR)			
c. Illustrate, how Cot cure analysis will determine the complexity of DNA? Explain with diagram.	8	CO1	K3
d. Discuss in details about repetitive DNA and Satellite DNA.	7	CO1	K2
3.a. Explain the process of replication in Prokaryotes?.	10	CO2	K2
b. Write the mechanism of Topoisomerase during replication.	5	CO2	K3
(OR)			
c. What is DNA repair? Discuss the mechanism of direct repair process with suitable examples.	8	CO2	K2
d. How resolution of Holliday model occurs during homologous recombination? Explain with diagram.	7	CO2	K3
4.a. How transcription occurs in prokaryotes? Explain in details with suitable diagram.	10	CO3	K3
b. Define polyadenylation. Explain the detail process with diagram.	5	CO3	K1
(OR)			
c. Discuss with diagram and reaction mechanism about the importance of Spliceosome in splicing.	10	CO3	K2
d. Write the importance and mechanism of 5'-capping of m-RNA.	5	CO3	K3
5.a. Explain the steps of translation in prokaryote.	10	CO4	K2
b. Write down the regulation of Lac operon system with diagram.	5	CO4	K3
(OR)			
c. Illustrate the process of post translational modification of protein.	8	CO4	K3
d. Write down the concept of r-DNA technology.	7	CO4	K2

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