QP Code: RJ23MTECH001 | Reg. No | | | | | | | | | | | AY 23

GIET UNIVERSITY, GUNUPUR – 765022

M. Tech (First Semester) Examinations, January– 2024

MPCBT1040 - Advanced Biochemistry and Molecular Biology

(Biotechnology)

Time: 3 Hrs | Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A **(2 x 10 = 20 Marks)**

Q.1. Answer all questions	CO#	Blooms Level
a. Define stereoisomer. Give examples.	CO1	K1
b. What is invert sugar? Give examples.	CO1	K2
c. Draw the structure of ATP.	CO2	K4
d. Give the energetics of glycolysis?	CO2	K3
e. What is the role of coenzyme Q in ETS?	CO3	K3
f. Differentiate between Polycistronic and Monocistronic DNA.	CO3	K1
g. What is the role of gyrase during replication?	CO4	K3
h. Emphasize the role of promoter in transcription.	CO4	K3
i. What is meant by closed promoter complex?	CO5	K1
j. What is operon? Give examples.	CO5	K1

PART – B **(10 x 5=50 Marks)**

Answer ***ANY FIVE*** questions	Marks	CO#	Blooms Level
2. a. Discuss the structure and functions of Starch.	5	CO1	K2
b. Classify the fatty acids with suitable examples.	5	CO1	K2
3.a. What is Nucleic acid? Discuss the structure and features of DNA proposed by Watson and Crick.	10	CO2	K3
4. a. Elaborate the steps of electron transport chain.	5	CO2	K1
b. Describe the steps involved Urea cycle.	5	CO2	K2
5.a. Discuss the mechanism of replication in prokaryotes?.	10	CO3	K2
6. a. Define how the telomerase is an indicator of aging and cancer.	5	CO3	K3
b. Discuss the structure of gene in eukaryotes.	5	CO4	K4
7.a. Explain the process of DNA translation in prokaryotes.	10	CO4	K2
8. a. What happens to lac operon in the presence and absence of inducer? Discuss briefly.	5	CO5	K2
b. Discuss the role of Transcription factor in transcription.	5	CO5	K2

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