Reg. No | | | | | | | | | | |

AY 24

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR

(GIET UNIVERSITY)

M.Tech. (First Semester) Regular Examinations, February – 2025

24MBTPC11001- Advanced Biochemistry and Molecular Biology

(Biotechnology)

Time: 3 hrs | Maximum: 60 Marks

Answer ALL questions

(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. Name the amino acids which contain sulphur.	CO1	K2
b. Draw the structure of t-RNA.	CO2	K3
c. Give the energetics of glycolysis.	CO3	K2
d. Write the role of gyrase during replication.	CO4	K1
e. What is spliceosome? Give its function.	CO5	K1

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions	Marks	CO #	Blooms Level
2. a. Explain the double helical model of DNA proposed by Watson and Crick.	5	CO1	K2
b. Discuss the structure and functions of Glycogen.	5	CO1	K2
(OR)			
c. Classify the fatty acids with suitable examples.	5	CO1	K2
d. Discuss the secondary structure of protein.	5	CO1	K2
3.a. Mention the steps involved in Citric Acid Cycle.	5	CO2	K2
b. Write a note on Oxidative phosphorylation.	5	CO2	K3
(OR)			
c. Explain the process involved in beta oxidation of fatty acids.	5	CO2	K1
d. Write down the steps of gluconeogenesis.	5	CO2	K2
4.a. Elaborate Hershey and Chase's Experiment.	5	CO3	K2
b. Discuss the structure of gene in eukaryotes.	5	CO3	K2
(OR)			
c. Discuss the mechanism of initiation of replication in prokaryotes.	5	CO3	K2
d. Classify the RNA and give their functions.	5	CO3	K2
5.a. Discuss the role of Transcription factor in transcription.	5	CO4	K2
b. Discuss the process of termination of transcription in prokaryotes.	5	CO5	K1
(OR)			
c. Write about the structure and function of lac operon.	5	CO4	K2
d. Explain the process of initiation of translation in prokaryotes.	5	CO4	K1
6.a. Discuss the techniques of 16S rRNA sequencing.	5	CO6	K2
b. Write notes on DNA vaccines.	5	CO6	K1
(OR)			
c. Discuss the major findings of Human genome project.	5	CO6	K1
d. Define gene therapy. Discuss about the types of gene therapy.	5	CO6	K3

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