QP Code: S253A023 | Reg. No | | | | | | | | | | | AY 23

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech (Third Semester – Regular & Supplementary) Examinations, November 2025

23BBTPC23002 - Biochemistry

(Biotechnology)

Time: 3 hrs | Maximum: 60 Marks

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

		CO #	Blooms Level
Q.1.	Answer ***ALL*** questions		
a.	A polysaccharide is consisting of 30 numbers of glucose unit and are arranged in a linear fashion. Calculate the molecular weight of Polysaccharides?	CO1	K3
b.	Differentiate between Nucleosides and nucleotides?	CO2	K2
c.	Mention the name of enzymes transfer the fatty acids to mitochondria for β-oxidation?	CO4	K2
d.	What are the major precursors for biosynthesis of pyrimidine in de novo pathway?	CO5	K1
e.	Define ribozymes with examples?	CO6	K1

PART – B **(10 x 5 = 50 Marks)**

		Marks	CO #	Blooms Level
	Answer ***ALL*** the questions			
2. a.	Discuss the different functions of proteins.	5	CO1	K2
b.	Explain the structure and functions of Starch.	5	CO1	K2
	(OR)			
c.	Write down the structure and functions of Cholesterol.	5	CO1	K1
d.	Explain the concept of mutarotation by giving the example of glucose.	5	CO1	K3
3.a.	Give and discuss the features of Watson and Crick model of DNA.	5	CO2	K3
b.	Define minerals. Classify the minerals and write about any five minerals.	5	CO2	K3
	(OR)			
c.	Discuss about any three water soluble vitamins.	5	CO3	K2
d.	Write notes on Phosphoryl group transfer molecules.	5	CO3	K2
4.a.	Diagrammatically explain the steps of TCA cycle with its energetics.	5	CO4	K3
b.	Write down the mechanism of Oxidative Phosphorylation and highlight on chemiosmotic theory.	5	CO4	K1
	(OR)			
c.	Discuss the three regulatory steps in Gluconeogenesis with suitable reaction.	5	CO4	K2
d.	Explain the basic steps of β-oxidation of fatty acids.	5	CO4	K3
5.a.	Graphically represent the role of different precursors for the biosynthesis of amino acids.	10	CO5	K3
	(OR)			
b.	Explain the de novo pathway for synthesis of pyrimidine.	5	CO5	K2
c.	Discuss the different steps involved in the catabolism of purine.	5	CO5	K2
6.a.	Classify the enzymes with suitable examples	5	CO6	K1
b.	Discuss in details about the mechanism of enzyme action.	5	CO6	K3
	(OR)			
c.	Explain in details about the properties of enzymes.	5	CO6	K2
d.	Write the functions of coenzymes and write notes on activation energy.	5	CO6	K1

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