

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2024
(Second Semester)

Branch- BIOCHEMISTRY

MICROBIAL BIOCHEMISTRY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Find the component present in bacterial cell wall. a) Peptidoglycan b) cellulose c) Chitin d) Lignin	K1	CO1
	2	Choose the photosynthetic pigment involved in light absorption in bacteria. a) Carotenoids b) Violacein c) Prodigiosin d) All	K2	CO1
2	3	Select the biomolecule that plays major role in anaplerosis reaction between glycolysis and TCA cycle. a) Glucose b) Pyruvate c) Oxaloacetate d) Fructose	K1	CO2
	4	Choose the alternative pathway for glycolysis. a) Krebs cycle b) Calvins cycle c) PK d) HMP shunt	K2	CO2
3	5	The technique used to alter the organism to enhance and get desired characteristics is a) Autoradiography b) Blotting c) Electroporesis d) Gene cloning	K1	CO3
	6	Identify the bacterial heteropolysaccharide. a) Peptidoglycan b) cellulose c) Starch d) Glycogen	K2	CO3
4	7	Recall the major fatty acid oxidation pathway. a) Alpha Oxidation b) Beta Oxidation c) Omega Oxidation d) Delta oxidation	K1	CO4
	8	Tell at what site primarily branched chain amino acids are metabolized? a) Brain b) Liver c) Skeletal muscle d) Kidney	K2	CO4
5	9	Find the sulphur containing essential amino acid acts as methyl donar. a) Cystine b) Cysteine c) Methionine d) Leucine	K1	CO5
	10	Which enzyme is commonly involved in tryptophan catabolic pathway? a) Dioxygenase b) Oxidase c) Enolase d) Decarboxylase	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer ALL questions
ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain the role of teichoic acid in cell wall of bacteria.	K2	CO1
	(OR)			
	11.b.	Illustrate on photosynthetic pigments in bacteria.		
2	12.a.	Extend a note on TCA cycle with its energetics.	K2	CO2
	(OR)			
	12.b.	Infer about the Interrelationship between EMP, HMP and ED pathways.		
3	13.a.	Outline on downstream processing for recovering products.	K2	CO3
	(OR)			
	13.b.	Explain about the homo polysaccharides in bacteria.		
4	14.a.	Show how even number of carbon atoms are oxidized?	K2	CO4
	(OR)			
	14.b.	Summarize the biosynthetic pathway of superchain fatty acids.		
5	15.a.	Specify the phenylalanine catabolic pathway.	K3	CO5
	(OR)			
	15.b.	Make use of microbes explain how the lignocelluloses are degraded?		

SECTION -C (30 Marks)

Answer ANY THREE questions
ALL questions carry EQUAL Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Illustrate on process of Electron transport in bacteria.	K2	CO1
2	17	Interpret the replenishing TCA intermediates in anaplerosis reactions.	K3	CO2
3	18	Identify the industrial important microbes by screening methods.	K2	CO3
4	19	Outline on steps involved in beta carotene biosynthesis.	K2	CO4
5	20	Explain in detail about the purine biosynthetic pathway.	K2	CO5

Z-Z-Z END