

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2023
(Second Semester)

Branch – BIOCHEMISTRY

MICROBIAL BIOCHEMISTRY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Iron-sulfur proteins where one Fe atom is coordinated by two His residues are named:
(i) Poison iron-sulfur proteins (ii) Rieske iron-sulfur proteins
(iii) Warburg iron-sulfur proteins (iv) Cytochrome C iron-sulfur proteins
- 2 The entry of glycerol into the bacterial cells is by _____.
(i) passive diffusion (ii) active diffusion
(iii) group translocation (iv) facilitated diffusion
- 3 In which of the following the microorganisms grow on the surface of the medium?
(i) Submerged fermentation (ii) Surface fermentation
(iii) Solid state fermentation (iv) Batch fermentation
- 4 Fatty acid biosynthesis occurs in _____.
(i) cytoplasm (ii) mitochondria
(iii) mitochondrial membrane (iv) ribosomes
- 5 Which of the following can be formed by hydroxylation of phenylalanine?
(i) Tyrosine (ii) Serine
(iii) Tryptophan (iv) Leucine

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Define cyanobacteria.
OR
b Give a structure of peptidoglycon.
- 7 a Short note on PK pathway.
OR
b Define Anaplerotic reaction.
- 8 a Enlist types of bioreactors.
OR
b Discuss short on mutant study.
- 9 a Short account on hydroxyfattyacids.
OR
b What are superchain fatty acid give Eg?
- 10 a Define purine and biological significance.
OR
b Outline the synthesis of methionine.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Discuss in brief on lipopolysaccharides and its uses.
OR
b Describe the mechanism of reductive pentose phosphate pathway with scheme.
- 12 a Detail an account on aldose pathway.
OR
b Outline and discuss the interrelationship between EMP, HMP & ED.
- 13 a Discuss on SFF methods and its application.
OR
b Write an essay on commercial production of microbial heteropolysaccharides.
- 14 a Enlist the branched chain fatty acid discuss on ring chained fatty acid biosynthesis.
OR
b Give a detailed account on beta carotene biosynthesis.
- 15 a Outline and describe a biosynthesis of Arginine and Proline.
OR
b Discuss in detail on degradation of lignocellulose.

Z-Z-Z

END