

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2022
(First Semester)

Branch – APPLIED MICROBIOLOGY

**MICROBIAL BIOCHEMISTRY AND PHYSIOLOGY / MICROBIAL
PHYSIOLOGY METABOLISM AND BIOLOGICAL CHEMISTRY**

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. Mention the average size of the cells in the exponential phase is _____.
(i) Larger than the initial size (ii) Smaller than the initial size
(iii) Equal to the initial size (iv) Maybe smaller or larger than the initial size
2. Which is the final electron acceptor for lactic acid fermentation?
(i) Lactic acid (ii) Oxygen
(iii) Pyruvate (iv) NAD
3. Which of the following amino acids are aromatic in nature?
(i) Methionine (ii) Isoleucine
(iii) Proline (iv) Histidine
4. Which of the following are found in extreme saline conditions?
(i) Halophiles (ii) Thermophiles
(iii) Psychrophiles (iv) Alkalophilis
5. Name the two essential fatty acids?
(i) Linoleate and linolenate (ii) Oleic and linoleic
(iii) Lauric and myristic (iv) Arachidonic and oleic

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

6. a) Discuss about the biosynthesis amino acids.
(OR)
b) Explain the nucleotide biosynthesis.
7. a) State the process of Methanogenesis.
(OR)
b) Illustrate C3 and C4 pathway.
8. a) How to determine the cell population density by using Quorum sensing?
(OR)
b) Describe the kinetics of regulatory enzymes.
9. a) Analyze about the estimation of carbohydrates.
(OR)
b) Illustrate the structural features of amino acids.
10. a) Classify about the lipids.
(OR)
b) Discuss the general characteristics of enzymes.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 6 = 30)

11. a) Elucidate about the Batch, continuous and synchronous culture.
(OR)
b) Give an account on sporulation, germination and regulation of *Bacillus* species.
12. a) Describe about the Bioluminescence.
(OR)
b) Interpret about substrate level phosphorylation.
13. a) Criticize the significance of Extremophiles in biotechnology.
(OR)
b) State about the adaptation in thermophiles.
14. a) Categorize the different types of classification of amino acids.
(OR)
b) Write an account on structure and different forms of DNA.
15. a) Elaborate about the Enzyme kinetics.
(OR)
b) Discuss about the Structure and functions of fat soluble vitamins.

Z-Z-Z

END