

**S.No. 5674**

**16 SCCMB 2**

(For candidates admitted from 2016–2017 onwards)

**B.Sc. DEGREE EXAMINATION, APRIL 2022.**

**Part III — Microbiology – Major**

**MICROBIAL METABOLISM**

**Time : Three hours**

**Maximum : 75 marks**

**PART A — (10 × 2 = 20)**

**Answer ALL questions.**

1. Chemo organo heterotrophs
2. Psychrotrophic Bacteria
3. NAD
4. Isozyme
5. Xanthophyll
6. Carboxysome
7. Alanine cycle
8. Transamination

9. Assimilatory sulfate reduction

10. Alcohol dehydrogenase

PART B — ( $5 \times 5 = 25$ )

Answer ALL questions, choosing either (a) or (b).

11. (a) Give an account on the nutritional requirements of microorganisms.

Or

(b) Deduce the role of salinity on growth of microorganism.

12. (a) Explain the features of oxidoreductase enzymes in Metabolic process.

Or

(b) Detail an account on classification of bacterial enzymes.

13. (a) Write about the oxygenic photosynthesis, give their significance.

Or

(b) Comment on the ATP Synthase enzyme and production of ATP.

14. (a) Write about synthesis of peptides.

Or

(b) Give a brief note on sources of nitrogen utilization patterns in microbes.

15. (a) Explain the process of dissimilatory sulphate reduction with illustrations.

Or

(b) Discuss the significance of Lactic acid fermentation.

PART C — ( $3 \times 10 = 30$ )

Answer any THREE questions.

16. Compare and contrast Batch and Continuous cultivation systems. Explain with examples.

17. Write about coenzymes and cofactors in metabolic process.

18. Describe the Electron Transport Pathway with coupled oxidative phosphorylation.

19. Outline the precursors and synthesis of essential amino acids.

20. Discuss the process of fatty acid synthesis? Add an account on  $\beta$  oxidation.