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**NY—03—2023**

**FACULTY OF SCIENCE**

**M.Sc. (First Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2023**

**(CBCS/New Pattern)**

**MICROBIOLOGY**

**(Microbial Physiology)**

**(Tuesday, 5-12-2023)**

**Time : 10.00 a.m. to 1.00 p.m.**

*Time—3 Hours*

*Maximum Marks—75*

*N.B. :—* (1) *All questions are compulsory.*

(2) *All questions carry equal marks.*

(3) *Give suitable example and diagrams if necessary.*

1. Describe in detail sulfur oxidation by thiobacillus species. 15

*Or*

Write on the following :

(a) Calvin cycle. 8

(b) Hydroxipropionate pathway. 7

2. Discuss bacterial aerobic respiration. 15

*Or*

Write on the following :

(a) ETC 8

(b) Superoxide dismutase. 7

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3. Describe in detail proton motive force. 15

Or

Write on the following :

(a) Active transport. 8

(b) PTS. 7

4. Explain in detail cytological and macromolecular changes during sporulation in bacteria. 15

Or

Write on the following :

(a) Germination of spore. 8

(b) Molecular architecture of spore. 7

5. Solve any *three* : 15

(a) Ammonia oxidation

(b) Facilitated diffusion

(c) Cyclic photophosphorylation

(d) Factors affecting on sporulation.

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