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25-MB-22

**M.Sc. II SEMESTER [MAIN/ATKT] EXAMINATION
MAY - JUNE 2025**

MICROBIOLOGY

Paper - II

[Microbial Physiology]

[Max. Marks : 75]

[Time : 3:00 Hrs.]

[Min. Marks : 26]

Note : Candidate should write his/her Roll Number at the prescribed space on the question paper.
Student should not write anything on question paper.
Attempt all five questions. Each question carries an internal choice.
Each question carries **15 marks**.

Q. 1 Define Photo synthesis and describe bacterial photo synthesis in detail.

(15 Marks)

OR

Write notes on the following topics -

(5 Marks each)

- i) Photo synthetic reaction center.
- ii) Electron donors.
- iii) Photo phosphorylation.

Q. 2 Explain Embden - Meyerhof - Parnas pathway and Entner Doudoroff pathway in detail.

OR

Explain the following -

- i) Anaerobic Respiration.
- ii) Kreb's cycle.

(7½ Marks)

(7½ Marks)

Q. 3 Describe Fatty acid oxidation pathways in detail and also mention energy yields from it.

(15 Marks)

OR

Explain the following -

(5 Marks each)

- i) Ketogenesis.
- ii) Triglycerols.
- iii) Lipids as energy reserves.

P.T.O.

Q. 4 Explain the following -

- i) Synthesis of Polysaccharides. (7½ Marks)
- ii) Biosynthesis of Amino Acids. (7½ Marks)

OR

Explain the following -

- i) Peptidoglycan. (05 Marks)
- ii) Biopolymers as cell components. (05 Marks)
- iii) Catabolism of Amino Acids. (05 Marks)

Q. 5 Explain conventional and Molecular methods for the study of microbial diversity in detail. (15 Marks)

OR

Write notes on the following -

- i) Extremophiles and their applications. (7½ Marks)
- ii) Mechanism and adaptation of Acidophilic, Alkaliphilic, thermophilic and Psychrophilic. (7½ Marks)

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