

M.Sc.(Microbiology) (NEP Pattern) Semester-I  
**NEP-74-1 / 01MSCMB04 - Paper-IV : Microbial Physiology & Metabolism**

P. Pages : 1

Time : Three Hours



**GUG/W/24/15128**

Max. Marks : 80

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1. Describe the Glycolysis and its regulation in detail. 16
- OR**
- a) Explain Gluconeogenesis in detail. 8
- b) Write a note on Krebs cycle. 8
2. Explain lipid biosynthesis in detail 16
- OR**
- a) Write note on Calvin cycle. 8
- b) Describe the mechanism of energy production in cyanobacteria. 8
3. Describe the biosynthesis of purines and pyrimidines by de novo pathway. 16
- OR**
- a) Describe regulation of amino acid metabolism. 8
- b) Explain the biosynthetic families of amino acids. 8
4. Describe the Nitrogen cycle. 16
- OR**
- a) Describe the symbiotic nitrogen fixation. 8
- b) Write a short note on nitrification and denitrification. 8
5. Describe the followings.
- a) Inhibitors of oxidative phosphorylation. 4
- b) Regulation of fatty acid metabolism. 4
- c) Degradation of pyrimidines. 4
- d) nif genes and their regulation. 4

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