

(i) Printed Pages : 3

Roll No. ....

(ii) Questions : 9

Sub. Code : 

1	1	7	5	8
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Exam. Code : 

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**Bachelor of Science (FYUP) 2<sup>nd</sup> Semester**

**(2056)**

**MICROBIOLOGY**

**Paper : Microbial Physiology (Common With B.Sc.**

**Bio-Technology 2<sup>nd</sup> Sem. FYUP)**

**Time Allowed : 3 Hours]**

**[Maximum Marks : 67**

**Note :-** Attempt five questions in all, selecting one question from each unit and compulsory question 1. Draw neat and clean diagram where required.

**(Compulsory Question)**

1. Explain/define/comment :

1. Starch vs Glycogen
2. Reducing vs Non-reducing sugars
3. Quaternary structure of protein
4. Chargaff's rule
5. Enzyme activity vs Enzyme Specificity
6. Allosteric enzymes
7. Oxidative phosphorylation

1×7=7

## UNIT—I

2. Classify monosaccharides based on functional group. Describe structure of glycolipids with suitable examples. Write a note on features of enzyme-substrate reaction.  $5 \times 3 = 15$
3. Describe structure of glucose and Ribose. Write a note on derived lipids with special reference to cholesterol. Differentiate the concept of apoenzyme and coenzyme.  $5 \times 3 = 15$

## UNIT—II

4. Describe the structure of DNA based on the Watson and Crick Model. Differentiate Globular vs Fibrous protein. Describe the cloverleaf structure of tRNA molecule  $5 \times 3 = 15$
5. Write a note on composition and different kinds of bonds in structure of DNA. Differentiate between secondary vs tertiary structure of protein. Describe structure and function of mRNA  $5 \times 3 = 15$

## UNIT—III

6. Differentiate Oxidoreductases vs Hydrolases. Competitive vs non-competitive enzyme inhibition. Apoenzyme vs Holoenzyme  $5 \times 3 = 15$

7. Describe effect of substrate concentration on enzyme activity. Write a note on Lock and Key hypothesis to explain enzyme activity. What do you understand by feedback inhibition of enzyme activity?

5×3=15

#### UNIT—IV

8. Describe the concept of substrate level phosphorylation with suitable examples. Draw flow chart of EMP pathway. Describe steps of conversion of pyruvic acid to acetyl CoA. 5×3=15
9. Differentiate Cyclic vs non-cyclic photophosphorylation. Draw Flow Chart of Pentose phosphate pathway. Draw ED pathway along with net rxn. 5×3=15