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B.M.S COLLEGE FOR WOMEN, AUTONOMOUS
BENGALURU – 560004
SEMESTER END EXAMINATION – SEPTEMBER -2023

B.Sc in Microbiology – 4th Semester

MICROBIAL ENZYMOLOGY AND METABOLISM
(NEP Scheme 2021-22 Onwards)

Course Code: MB4DSC04
Duration: 2 ½ Hours

QP Code: 4020
Max Marks: 60

Instructions to Candidates:

- 1) *Answer all the Sections*
- 2) *Draw diagrams wherever necessary*

SECTION - A

I. Answer the following. (5X2=10)

1. Explain H₂ oxidation
2. What is Denitrification?
3. What are Isoenzymes?
4. What is TPP?
5. Define allosteric activator

SECTION - B

II. Answer any 4 of the following. (4X5=20)

6. Explain Propionic acid fermentation
7. Discuss deamination with an example
8. Write a note on Lactate dehydrogenase
9. Explain Random theory of enzymes
10. Explain briefly Hill's equation and Koshland model
11. What is Ping-Pong reaction? Explain with an example

SECTION – C

III. Answer any 2 of the following. (2X10=20)

12. Explain Kreb's cycle and its ATP generation
13. Explain β -oxidation of fatty acids
14. Describe the concept of enzyme action. Add a note on classification of enzymes
15. Define enzyme inhibition. Explain the different type of enzyme inhibition

SECTION – D

IV. Answer all multiple choice questions (MCQs)

(10X1=10)

16. Reduced coenzymes include

- (a) NADH₂
- (b) FADH₂
- (c) ATP
- (d) Both a and b

17. The other name for shunt pathway is

- (a) EMP
- (b) ED
- (c) HMP
- (d) PK

18. Pasteur Effect relates to

- (a) Alcohol fermentation
- (b) Mixed acid fermentation
- (c) Butyric acid fermentation
- (d) Acetic acid fermentation

19. *Thiobacillus ferrooxidans* relates to

- (a) Sulphur oxidation
- (b) Iron oxidation
- (c) Hydrogen oxidation
- (d) Sulphate reduction

20. IMP is the basic compound for the synthesis of

- (a) Pyrimidine synthesis
- (b) Fatty acid synthesis
- (c) Purine synthesis
- (d) Acetate synthesis

21. Acetyl co A is formed from

- (a) Pyruvic acid
- (b) Citric acid
- (c) Oxaloacetic acid

- (d) None of the above
22. Acetobacter relates to
- (a) Alcohol production
 - (b) Ethanol oxidation
 - (c) Beta oxidation
 - (d) Amino acid synthesis
23. Lysozyme is an example for
- (a) Isoenzymes
 - (b) Multimeric enzymes
 - (c) Induced enzyme
 - (d) Abzyme
24. Iron is a cofactor for
- (a) Carbohydrate
 - (b) Lipid
 - (c) Nucleotide
 - (d) Protein
25. Lock and Key hypothesis was given by
- (a) Emil Fisher
 - (b) Koshland
 - (c) Michell
 - (d) Metchnikoff