

2024

2nd Semester Examination

MICROBIOLOGY (Honours)

Paper : C 3-T

(Biochemistry)

[CBCS]

Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any **five** of the following questions : 2×5=10

1. Define Gibb's Free energy.
2. State 2nd law of thermodynamics.
3. Draw the structure of isoleucine and mention the number of chiral centres in it.
4. What is the value of $V_{\max}$ if V_0 is equal to 1μ mol/min at $1/10$ KM. for an enzyme that follows simple M-M kinetics?

P.T.O.

(2)

5. Why does ghee melts on heating and egg solidify after boiling?
6. "Fatty acids with longer hydrocarbon chain and saturation have the lowest melting point."— Justify the statement.
7. Mention the importance of Lineweaver-Burk plot.
8. What are the vitamin precursors of TPP and FAD?

Group - B

Answer any **four** of the following questions : $5 \times 4 = 20$

9. Explain why phosphoric acid anhydrides are considered as high energy compounds.
10. Explain why : $2\frac{1}{2} \times 2 = 5$
 - (a) Sucrose is a non-reducing sugar.
 - (b) β D-Glucose is more stable than α D-Glucose.
11. (a) Justify linoleic acid is an essential amino acid.
 - (b) Enzyme is an excellent catalyst. $2+3$
12. What are the four level structure of a protein? What are the factors that stabilize the higher structure of protein? $2+3$
13. (a) What are isozymes? Explain with a suitable example.

(3)

- (b) In the following enzyme catalysed reaction what will be the effect on substrates A, B, C, D if the enzyme E2 is inactivated? $2+3$

	E1	E2	E3	
A		B	C	D

14. State the properties and importance of Vitamin D. 5

Group - C

Answer any **one** of the following questions : $10 \times 1 = 10$

15. (a) What is an open system? Give example of a biological open system explaining properly.
 - (b) Define enthalpy, entropy and free energy. $(2+2)+(3 \times 2)$
16. What is the general classification of amino acids? Write the physical properties of amino acids. $7+3$
