

2015

M.Sc.

1st Semester Examination

MICROBIOLOGY

PAPER—MCB-104

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer any two questions from each group.

Group—A

[Marks : 20]

Answer any two questions.

1. (a) What do you mean by allosteric modulation of enzymes activity?
- (b) State the importance of LB plot over hyperbolic plot of enzyme kinetics.

(Turn Over)

- (c) Describe the process of electron transport through respiratory chain. 3+3+4
2. (a) What is zwitterion ? Write the acid-base properties of glycine.
- (b) State the role of proline and lysine in the stabilization of collagen structure.
- (c) Write the cleavage site of :
- (i) Cyanogen bromide ;
 - (ii) Trypsin ;
 - (iii) Thrombin. (1+2)+(2+2)+3
3. Write short notes on (any *four*) : $2\frac{1}{2} \times 4$
- (a) Ubiquitination of protein.
 - (b) Abzyme.
 - (c) ATP binding cassette.
 - (d) Chemo autotrophs.
 - (e) Cell wall synthesis in bacteria.

Group—B

[Marks : 20]

Answer any *two* questions.

1. (a) How lactose is catabolized in physiological system? 2
- (b) Briefly describe about the committed steps of purine and pyrimidine biosynthesis. 1.5+1.5
- (c) What are the different catabolic fates of pyruvate generated through glycolysis? 2
- (d) How TCA cycle is regulated? 3

2. (a) State the components of nif gene. Describe how nif gene regulates the activity of nitrogenase complex.
- (b) Mention how covalent modification regulates glutamine synthesis. 2+5+3

3. Write short notes on any *four* : 4×2 $\frac{1}{2}$
 - (a) Anaplerosis ;
 - (b) Carnitine shuttle ;
 - (c) Entner -Dandroff Pathway ;
 - (d) Pasture effect ;
 - (e) Precursor of purine biosynthesis.