# 2012

## M.Sc.

## 1st Semester Examination

## MICROBIOLOGY

### PAPER—IV (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) Write the structure of two sulphur containing amino acid : Mention their significance in the maintaining the tertiary structure of protein.

(b) Write brief notes on :

(i) Protein motif force.

(ii) Molecular cheperon.

(c) What is the cleavage site of trypsin.

(1+2)+(3×2)+1

2. (a) What is catalytic efficiency of enzyme ?

(b) Why linear transformation of enzyme Kinetics is needed ?

(c) State the limitation of L–B plot.

(d) What are components of $F_0$–$F_1$ ATP use system ?

2+3+2+3

3. Write short notes on (any *four*) : $4\times2\frac{1}{2}$

(a) Acetylation of protein.

(b) Denaturation of protein.

(c) Allosteric enzyme.

(d) cAMP as second messanger.

(e) Ramachandran plot.

(f) Artificial membrane.

(g) Ribozyme.

(h) MAPK signaling pathway.

## Group—B

[Marks : 20]

Answer any *two* questions.

**4.** (a) Describe the role of phosphotransferase system (PTS) in regulation of sugar metabolism. 5

(b) Describe the role of Phosphoketolase enzyme in heterofermentation system. 3

(c) State the metabolic importance of glucose-6-phosphate. 2

**5.** (a) Describe the pathway of glutamine synthesis. 5

(b) State its regulatory steps. 3

(c) What is PHB? 2

6. Write short notes on (any *four*) : $2\frac{1}{2} \times 4$

(a) Cataplerosis.

(b) Fatty acid synthase.

(c) Significance of pentose phosphate pathway.

(d) Precursors of de-novo synthesis of purine.

(e) Amphibolic role of TCA cycle.

(f) Anapleurosis

(g) Enzymes in glyoxalate cycle