2010

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) How secondary structure of protein is stabilized?

(b) Briefly describe the Ramachandran plot and its importance.

(c) Write the functions of molecular cheperon.

3+5+2

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

(b) Mention the assumption of steady state kinetics of enzymatic reaction.

(c) State the properties of allosteric enzyme.

2+4+4

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

(a) c AMP as second messenger ;
(b) ATP Synthase ;
(c) Ribozyme ;
(d) Application of abzyme ;
(e) Denaturation of Protein ;
(f) Acetylation of Protein.

Group—B

[Marks : 20]

Answer any *two* questions.

1. (a) Describe the regulatory mechanism of histidine biosynthesis. 3

(b) Describe the major routes of ammonia assimilation in bacteria by mentioning the respective enzymes. 3

(c) State the role of pyruvate in co-ordinate control of metabolism. 4

2. (a) Describe the genetic control of glutamine synthesis. 3

(b) How hydroxybutarate is synthesized in bacteria ? 4

(c) Mention the regulatory process of TCA cycle. 3

3. (a) Write the components of fatty acid synthase. 2

(b) What is the rate limiting steps of fatty acid bio-synthesis ? 3

(c) Distinguish between glycero-Phospholipid and Sphingolipid. 2

(d) State the role of Phospholipid in maintenance of membrane fluidity. 3