

M.Sc.

2015

4th Semester Examination

MICROBIOLOGY

PAPER—MCB-402

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.

Illustrate the answers wherever necessary.

Answer all questions of the following.

(Group-A)

(Marks : 20)

Answer any two questions.

1. (a) Why microbial secondary metabolites are pharmaceutically so important?
- (b) What are the difference between MIC and MBC values?

(Turn Over)

- (c) The 6 APA is the intermediate of all semisynthetic penicillin. — Justify the statement.
- (d) Write the unique characteristics of fermentation for production of precursors of tetracycline.

2+2+3+3

2. (a) Describe the steroid biotransformation citing specific example of microbes.
- (b) Why probiotics are considered as effective therapeutic agent to cure gastro intestinal diseases?
- (c) State the uses of dextran of different sizes.

5+3+2

3. Write short notes on (any four):

4×2½

- (a) Edible mushroom.
- (b) Top-fermented beer.
- (c) Characteristics of wine yeasts.
- (d) Recombinant therapeutic proteins from *saccharomyces cerevisial*.
- (e) Pluripotent stem cell.

- (f) Therapeutic uses of stem cell.
- (g) Production of PHB.

(Group-B)

(Marks : 20)

Answer any two questions

4. (a) What do you mean by oriental fermented food ? Name two such type of food along with country of origin, substrate used and micro organisms involved. Mention their productions through Flow diagram.
- (b) State the significance of use of fermented food.
- (1+3+4)+2
5. (a) Practices used for food preservation.
- (b) Production of cheese.
- (c) D, Z and F values.

3+3+4

6. (a) What are the advantages of using natural colour as food additive ?
- (b) What are the advantages and disadvantages of bacteriocin as food additive ?
- (c) Discuss how nanotechnology is being applied to medical science.
- (d) What is nisin ? How it is produced ?

2+3+3+(1+1)