

M.Sc.

2017

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) Define and differentiate (with examples) Chemotherapy and Immunotherapy.
(b) Define and differentiate (with examples) Therapeutic Index and Chemotherapeutic Index.

- (c) Describe briefly on penicillin G production.
- (d) State the role of penicillin amidase for preparation of different semisynthetic antibiotics.

1+2+4+3

2. (a) Mention two therapeutic enzymes with their source and clinical uses.

(b) What are the nutritional importance of mushrooms?

(c) State the characteristics of an ideal Probiotic organism. How they are effective against gastrointestinal ailments?

2+3+(2+3)

3. Write short notes on any *four* of the following : $2\frac{1}{2} \times 4$

(a) Inhibitors of β -lactomase.

(b) Peptide antibiotics.

(c) Mode of action of antifungal antibiotics.

(d) Sederophores - medicinal uses.

(e) Production of glutamic acid.

(f) Superbag and super bacterium.

(Group-B)

(Marks : 20)

Answer any *two* questions

4. (a) Write down the prospects and applications of nanomaterials in the field of medicine.
- (b) Write in brief about the toxicity of nanoparticles.
- (c) What do you mean by "limit dextrin" ?
- (d) What is the role of dextran 40 and dextran 70 in therapeutic purpose ?

5+1+2+2

5. What do you mean by biopolymers ? Write its properties. How PHA can be produced from lignocellulosic biomass ? Write the applications of PHA.

2+2+3+3

6. (a) What are the importance of microbes in steroid biotransformation ?
- (b) What are the fermentation phages for bioconversion of steroids ?

(c) What are the roles plays by microbes in hydroxylation of progesterone to cortisone ?

2+5+3
