2018

M.Sc. 4th Semester Examination

MICROBIOLOGY

PAPER—MCB-402

Subject Code—31

Full Marks : 40

Time : 2 Hours

The figures in the margin indicate full marks.

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

Illustrate the answers wherever necessary.

Group–A

[20 Marks]

Answer any *two* questions.

1. (a) What are the basis of pharmacokinetics and pharmacodynamics ?

   (b) What do you mean by natural, semi-synthetic and synthetic antibiotics ?

(Turn Over)

(c) Describe briefly the production steps of tetracycline.

(d) Give an example of commercial polypeptide antibiotics.

$$3+2+4+1$$

2. (a) Why dextran is therapeutically important ?

(b) Describe the production criteria of different size dextran.

(c) Which microorganisms are industrially used for the production of vitamin B_2 (riboflavin).

(d) What types nutrients are present in mushroom.

$$2+4+2+2$$

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

(a) Half life of drugs ;

(b) Primary vs. secondary metabolies ;

(c) Characteristics of an ideal antimicrobial agent ;

(d) Iron-chelating agent ;

(e) Health benefits of probiotics ;

(f) Functional properties of synbiotics.

Group–B

[20 Marks]

Answer any *two* questions.

4. (a) Write the characteristics of nano particles.

   (b) Describe the uses of nano particles in agriculture.

   (c) What is nano toxicity ?   3+4+3

5. (a) What is the importance of production of biopolymer using microbial strains.

   (b) State the application of alginate.

   (c) What is the composition of xanthan ?

   (d) Briefly describe the selection of microbes for biotransformation of steriods.

   (e) Which microbes are used for hydroxylation of steroid molecule.   2+2+2+3+1

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

   (a) Linear vs. network biopolymer ;

   (b) PHB ;

(c) Microbial spoilage of pharmaceutical products ;

(d) What are the sources of microbes for contamination of pharmaceutical products ;

(e) Good pharmaceutical manufacturing practices ;

(f) Biosensor.

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