M.Sc.

2016

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 drugtarget. What are the chief objectives of rational drug targeting? Give suitable examples with your answer.

   (b) Differentiate between pharmacokinetics and pharmacodynamics.

(c) Describe briefly about production of glutamic acid. Why it is so important in food industry?

$(1+3)+3+(2+1)$

2. (a) What are the indices of antibiotic sensitivity?

(b) Describe briefly the production of tetracycline through microbial fermentation.

(c) Write the mode of action of—
   (i) Cavulonic acid;
   (ii) Nystatin;
   (iii) Chloramphenicol;
   (iv) Streptomycin. $\qquad$ 2+4+4

3. Write short notes on of the following $\qquad$ $2\frac{1}{2} \times 4$

(a) Fermented rice and its health benefits;

(b) Hybridisation of edible mushroom & its therapeutic importance;

(c) Synbiotics;

(d) Chemotherapeutic Index.

(Group–B)

(Marks : 20)

Answer any *two* questions

4. (a) Mention the various possible route by means of which nanoparticles (NPs) exhibited antimicrobial property ?

(b) Why nanoparticles are gaining importance these days as a potent drug ? Mention two disadvantages of nanoparticles. 5+(3+2)

5. (a) If you supplied with an unknown nanoparticles. How will you determine its chemical nature along with its morphological property ?

(b) Define biosensor. Mention its clinical application ? 5+(2+3)

6. (a) Biopolymers are renewable, sustainable bio-degardable, compostable and carbon neutral. Justify the statement ? How will you enhance the PHB production in a PHB producing bacterial strain ?

(b) Write the application of PHA in medicine ?
What do you mean by rule of five, generally used in
pharmacokinetics ?   (3+2)+(2+3)

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