Roll No. : .....

Total No. of Questions : **16**] [Total No. of Printed Pages : **3**

NBIO–167

M.Sc. Biotechnology (Semester–I) Examination, 2023

CONCEPT OF MICROBIOLOGY

Paper – BT-103

*Time : **3** Hours*] [*Maximum Marks : **40***

The question paper contains three Sections.

Section–A **(Marks : 1 × 10 = 10)**

Note :– The candidate is required to answer all the *ten* questions carries **1** mark each. The answer should not exceed **50** words.

Section–B **(Marks : 3 × 5 = 15)**

Note :– The candidate is required to answer *five* questions by selecting at least *one* question from each Unit. Each question carries **3** marks. Answer should not exceed **200** words.

Section–C **(Marks : 5 × 3 = 15)**

Note :– The candidate is required to answer *three* questions by selecting at least *one* question from each Unit. Each question carries **5** marks. The answer should not exceed **500** words.

Section–A

1. (i) Who discovered the phase contrast microscopy ?

   (ii) What do you know about batch culture ?

   (iii) Write any *two* examples of Basic Dyes.

   (iv) Name the causal organism of Green ear disease.

   (v) Write the symptoms of Brucellopsis.

   (vi) What are Fimbrae ?

   (vii) Give any *two* examples of water transmitted disease.

   (viii) Name any microorganism which is responsible for denitrification.

   (ix) What is Rhizosphere ?

   (x) What do you know about pasteurization ?

Section–B

Unit–I

2. Write a note on phase contrast microscopy.

3. Describe the physical and chemical methods of sterilization. 1½+1½=3

4. Write short notes on the following :

   (i) Role of algae in agriculture

   (ii) Suspension culture 1½+1½=3

Unit–II

5. Write a note on Chicken-pox.

6. Give an account on replication of viruses.

7. Write short notes on the following : 1½+1½=3

   (i) Serology

   (ii) Ranikhet disease

Unit–III

8. Write a note on different methods of food preservation.

9. Give an account on Air Sampling Devices.

10. Give an account on methods of water purification used in Municipal water supplies.

Section–C

Unit–I

11. What is the principle of the working of an electron microscope ? Describe the principal part of a transmission electron microscope. 2+3=5

12. What are Fixatives ? Describe the chemistry of fixation. 1+4=5

Unit–II

13. With the help of suitable diagram, describe the structure of bacterial cell.

14. Describe the symptoms, causal organism and disease cycle of citrus canker disease. 2+1+2=5

Unit–III

15. Describe in detail the role of microbes in nitrogen and sulphur cycle in nature. 2½+2½=5

16. Discuss in detail the air-born diseases and their control measures. 2½+2½=5