

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR

Academic Year : 2019-2020

Course Title : **Fundamentals of Microbiology**

Total Marks : 50

Time : 11.00 to 13.00 Hrs.

Note :

- 1) All questions from **Section 'A'** are compulsory.
- 2) Solve **Any Three** questions from **Section 'B'**.
- 3) Draw neat and well labeled diagram wherever necessary.

SECTION –‘A’

Q. 1. A) Choose the most appropriate answer from the option given below. (05)

- i) The book 'Micrographia' is written by which scientist?
 - a) Joseph Lister
 - b) Eli Metchnikoff
 - c) Robert Hooke
 - d) Rudolph Virchow
- ii) The introduction of phage hybrid DNA into the host cell is known as
 - a) Transfection
 - b) Transduction
 - c) Transformation
 - d) Transcription
- iii) The dye Crystal violet can selectively inhibit
 - a) Gram Positive bacteria
 - b) Gram negative bacteria
 - c) Yeasts
 - d) Molds
- iv) Phycology is the study of
 - a) Protozoa
 - b) Algae
 - c) Fungi
 - d) Bacteria
- v) The microbial association in which the growth of one organism inhibits the growth of the second organism is known as
 - a) Antibiosis
 - b) Synergism
 - c) Metabiosis
 - d) Symbiosis

- What is a selective medium? Give an example.
- What is cell theory?
- State the motility organs of bacteria
- Differentiate between transcription and transduction.
- What is taxonomy?

- i) What is maximum resolving power of a microscope?
- ii) Define Immunology.
- iii) Stain used in simple staining.
- iv) What do you mean by bacteriostatic agent?
- v) What are bactericidal agents? Give an example.

(P.T.O.)

- B) State whether True or False. If false, rewrite the statement after making necessary corrections. (05)
- i) Transverse binary fission is the most common method of reproduction in bacteria.
 - ii) Obligate aerobes cannot grow in the presence of oxygen.
 - iii) Violet red bile agar is an all purpose medium.
 - iv) The phase of adjustment in a growth curve is known as lag phase.
 - v) Fastidious organisms do not need a variety of growth factors for their growth.

SECTION – 'B'

- Q.3 A) Explain the various phases of bacterial growth curve with schematic diagram. (05)
B) Explain in brief various physical factors affecting bacterial growth. (05)
- Q.4 A) Differentiate between Gram positive and Gram negative cell wall with the help of neat labeled diagram (05)
B) Discuss in short Direct and Indirect methods of measurement of bacterial growth (05)
- Q.5 A) Differentiate between DNA and RNA. (03)
B) List the major contributions of Josph Lister in the field of Microbiology. (03)
C) What are Aseptic techniques? List the various aseptic techniques used in the microbiology laboratory. (04)
- Q.6 A) Explain the structure of a bacterial flagellum. (03)
B) What do you understand by 'Diauxic growth'? (03)
C) How water can serve as a carrier of pathogen? (04)
- Q.7 Discuss in details microflora of Soil and Air. (10)
