

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR
SEMESTER END THEORY EXAMINATION, B.Tech. (D.T.)

Semester	: V Dean	Academic Year	: 2023-2024
Course No.	: DM-101	Course Title	: Fundamentals of Microbiology
Credits	: (2 + 1)	Total Marks	: 50
Day & Date	: Monday, 11/03/2024	Time	: 2.00 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 options given below. (05)
- i) Who gave the Five kingdom classification?
 - a) Carl Woese
 - b) Robert Whittaker
 - c) Robert Koch
 - d) Joseph Lister
 - ii) Results of standard plate count are expressed as
 - a) CFU/ml
 - b) PFU/ml
 - c) Bacteria/ml
 - d) Viruses/ml
 - iii) Which of the following is used as solidifying agent in microbiological media?
 - a) Gelatin
 - b) Agar-agar
 - c) Starch
 - d) Glycogen
 - iv) Swan Neck Flask Experiment was conducted to
 - a) Disapprove spontaneous generation theory
 - b) Prove the germ theory of disease
 - c) Prove that DNA is the genetic material in a cell
 - d) Prove the double helical structure of DNA
 - v) Counter stain used in Gram staining is
 - a) Crystal Violet
 - b) Methylene Blue
 - c) Carbol fuchsin
 - d) Safranin
- B) Do as directed. (Answer in one line) (05)
- i) Which organelle is known as protein factory of cell?
 - ii) What do you understand from the term Mutation?
 - iii) State the role of diaphragm in working of microscope.
 - iv) State the chemical nature of bacterial Cell wall.
 - v) What do you mean by resolution in a Microscope?
- Q. 2 A) Give Scientific Reason for (05)
- i) Mitochondria is the powerhouse of eukaryotic cell.
 - ii) Use of laminar air flow for aseptic culturing.
 - iii) Using heat/high temperature as a bactericidal agent.
 - iv) Using a mordant in Gram's Staining.
 - v) Death phase in bacterial growth curve.

(P.T.O.)

- B) State whether True or False. If false, rewrite the statement after making necessary corrections. (05)
- i) All microorganisms in nature are harmful to humans.
 - ii) Gram-negative bacteria appear pink after gram's staining.
 - iii) Study of protozoa is called as Mycology.
 - iv) Ribosomes contain the genetic information.
 - v) In Lag phase, cells do not grow in numbers as they are in preparation of cell division.

SECTION - 'B'

- Q. 3 A) Briefly explain the five kingdom classification. (05)
B) Describe the various parts of a compound light microscope and its functions. (05)
- Q. 4 A) Discuss the contribution of Louis Pasteur, Joseph Lister and Robert Koch in the field of Microbiology. (05)
B) Discuss the factors affecting the growth of Microorganisms. (05)
- Q. 5 A) Difference between DNA and RNA. (03)
B) Draw a labeled diagram of Prokaryotic cell structure. (03)
C) Difference between Prokaryotes and Eukaryotes. (04)
- Q. 6 A) State the nutritional classification of bacteria. (03)
B) Draw a bacterial growth curve and explain various phases. (03)
C) Comment on Transformation and Transduction. (04)
- Q. 7 Discuss in detail about the microflora of Soil, Water and Air. (10)
