

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

Semester	: I (V Dean)	Academic Year	: 2021-2022
Course No.	: DM-101	Course Title	: Fundamental of Microbiology
Credits	: 2 + 1=3	Total Marks	: 50
Day & Date	: Monday, 23/05/2022	Time	: 02.30 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) Higher content of peptidoglycan is found in
 - a) Gram negative Bacteria
 - b) Gram Positive Bacteria
 - c) Acid fast Bacteria
 - d) All of these
- ii) Clostridium is a
 - a) Spore former anaerobe
 - b) Non-spore former anaerobe
 - c) Facultative anaerobe
 - d) Facultative aerobe
- iii) Uracil is absent in
 - a) DNA and RNA both
 - b) RNA
 - c) DNA
 - d) None of these
- iv) Nigrosin is used for
 - a) Negative staining
 - b) Gram staining
 - c) Simple staining
 - d) None of these
- v) Double layering of Agar is required for
 - a) Standard plate count
 - b) Yeast and Mold count
 - c) Coliform count
 - d) None of these

B) Define the following: (05)

- i) Microbiology
- ii) Fungi
- iii) Infection
- iv) Virus
- v) Protozoa

Q. 2 A) Give the Reason for the following. (05)

- i) Use of selective media used for the growth of microorganisms.
- ii) Why Gram's iodine is used for Gram's staining?
- iii) Why milk is pasteurized?
- iv) Purpose of sterilization
- v) Lag phase is known as phase of adjustment

(P.T.O.)

- B) State whether True or False. If false, rewrite the statement after making necessary corrections. (05)
- i) Bacteriophages are the fungi.
 - ii) Autoclaving is done at 15 psi for 15 minutes to create 100°C temperature.
 - iii) Antibiotics can kill the both virus and bacteria.
 - iv) Thermal cycler is used to amplify the DNA and RNA samples by PCR.
 - v) Immersion oil is mainly used when observed by the 40X objective lens of the microscope.

SECTION - 'B'

- Q. 3 A) Write the difference between the cell wall of Gram Positive and Gram Negative Bacteria. (05)
- B) Discuss in detail about the contribution of Leeuwenhoek in Microbiology field. (05)
- Q. 4 A) Describe in detail about the 'Scope and application of Microbiology in Dairy Industry'. (05)
- B) Write a short description on viruses with its structure. (05)
- Q. 5 A) Write a short note about the 'DNA as the genetic material'. (03)
- B) What is replication of DNA? (03)
- C) Discuss about the structure of RNA with necessary figure. (04)
- Q. 6 A) Write a short note on microbiology of soil. (03)
- B) Write a short note on 'Immunology'. (03)
- C) What is Vaccination? Write in brief on diseases which can be prevented by vaccination? (04)
- Q. 7 Write in detail about difference between the Prokaryotes and Eukaryotes. (10)
