

COURSE CODE (CREDITS): 20MS1BT114 (2)

MAX. MARKS: 15

COURSE NAME: MICROBIOLOGY

COURSE INSTRUCTORS: Dr. Rahul Shrivastava

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory. (b) Marks are indicated against each question in square brackets. (c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems.

Q1. Serial dilution of a water sample was done. 100 μ L of (-6) dilution showed 48 and 52 bacterial colonies on two plates of Nutrient Agar Media using Pour Plate Method. Calculate the number of bacteria present per mL of the water sample. [2]

Q2. You are provided with water and soil samples from Ladakh region with unknown bacterial population in it. Design an experiment to culture the unknown bacteria present in the samples, and then to study its nutritional requirements. [3]

Q3. Correct the following **Wrong Statements** and Give reasons for your answer: [1.5 X 2 = 3]

- A. Optical Density measurements provide accurate count of viable cells in an inoculum.
- B. 'Pour plate technique' can be used for counting the number of microbes in a biological sample.

Q4. Differentiate between 'Selective media and 'Differential media' with examples. [3]

Q5. Discuss Koch's postulates with suitable diagrams; discuss its significance in the development of medical microbiology. [4]