COURSE CODE (CREDITS): 21MS1MB111 (3)   MAX. MARKS: 15

COURSE NAME: GENERAL MICROBIOLOGY AND BACTERIOLOGY

COURSE INSTRUCTORS: Dr. Rahul Shrivastava   MAX. TIME: 1 Hour

Note: (a) All questions are compulsory. **(b) Calculators are NOT ALLOWED**

Q. No.	Question	Marks
Q1.	**Case Study:** A microbiology student is attempting to culture a newly isolated bacterium. When grown on **minimal medium**, the organism fails to grow. However, when the minimal medium is supplemented with **Vitamin B1 (thiamine)**, the bacterium shows good growth.	
	1. What type of medium is minimal medium: synthetic or complex? Differentiate between the two with example.	[2]
	2. Predict why Vitamin B1 supplementation was necessary for growth in this case?	[1]
	3. How can such experiments using minimal medium, be used for determining the nutritional requirements of unknown bacteria?	[2]
Q2.	Q4. Calculate the CFU of the bacteria present in each soil sample from the following data; 100µl of diluted sample was used for plating each time.	[4]

Sample No.	Dilution Factor	No. of colonies
Sample 1	-4	48, 60, 80
Sample 2	-6	54, 78, 378
Sample 3	-8	Not-countable
Sample 4	-10	0, 2

Q. No.	Question	Marks
Q3.	Discuss Koch's postulates with suitable diagrams; discuss its significance in the development of medical microbiology.	[4]
Q4.	Compare the advantages, limitations and application of Pour Plate and Spread Plate Methods.	[2]