



VIT[®]

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

Slot: D2+D2

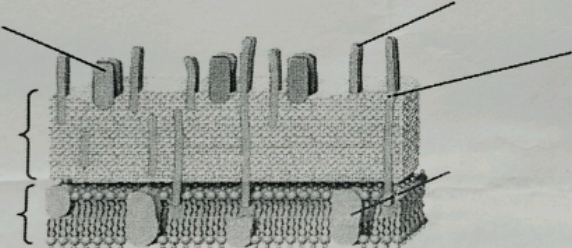
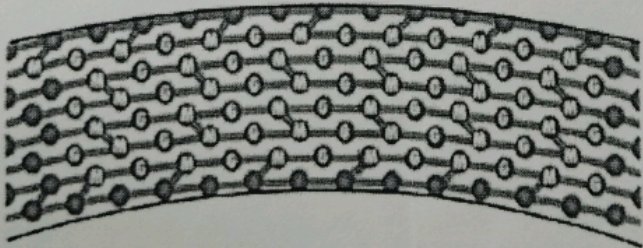
SCHOOL OF BIO SCIENCES AND TECHNOLOGY
FALL SEMESTER 2023-24

CONTINUOUS ASSESSMENT TEST – II

Programme Name & Branch : B.Tech Biotechnology
Course Code : BBIT203L
Course Name : Microbiology
Class Number(s) : VL2023240101994, VI2023240101983
Faculty Members : Dr.C.Subathra Devi, Dr.B.Reena Raj Kumari
Date of the Examination : 18.10.23
Duration : 90 minutes Max. Marks : 50

General instruction(s): 1. Draw neat diagrams wherever necessary

2. Write the specific points relevant to the questions

Q. No	Question	Marks
1	a) Label the figure using the labels (i.–iv.) provided. (0.5 marks per label) i. Wall associated protein iv. Lipoteichoic acid ii. Integral membrane protein v. cytoplasmic membrane iii. Cell wall vi. Teichoic acid  b) What kind of bacterial cell envelope is depicted above? (1 Mark) c) Typically, if a bacterium with this type of cell envelope is stained with Gram's stain what color does it become? (1 Mark) d) Name the molecule that is schematically represented below (1 Mark)  e) What does the M represent? (Give the full name) (2 Marks) f) What does the G represent? (Give the full name) (2 Marks)	10
2.	You are provided with two throat samples, based on the signs & symptoms physician is suspecting that the patients may have a diphtheria infection. How do you confirm the presence of <i>Corynebacterium diphtheriae</i> by a staining technique? How do you differentiate <i>C.diphtheriae</i> from other strains? Explain the technique. [10]	10
3.	You are provided with two sputum samples, based on the signs & symptoms physician is suspecting that the patients may have a tuberculosis infection. How do you confirm the presence of <i>Mycobacterium tuberculosis</i> by a staining technique? How do you differentiate	10

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	<i>Mycobacterium</i> from other strains? Explain the technique.	
4.	Aditi was doing a project on <i>Bacillus megaterium</i> , she kept the plates for incubation. She forgot to take the plates from the incubator after 24 hours. After 3 weeks, she observed the plates, the plates are very dry.....but again she prepared a nutrient broth & sub cultured the organism.....what happened to this organism in the three weeks period? Explain the phenomenon. What is happening in the sub cultured broth? [10]	10
5.	You are provided with a bacterial strain isolated from milk sample, how will you identify the bacteria? Illustrate the steps with a neat flow diagram.	10
