VCD: 150423 **CLASS: FYBT SEM II SUB: CELL BIOLOGY & MICROBIOLOGY**

2 ½ Hours **Total Marks: 75**

NOTE:

1. Attempt **all** questions.
2. **All questions** carry **equal** marks.
3. Draw **neat labeled diagrams** wherever necessary.
4. Use of **log tables** and **non-programmable calculator** is **allowed.**
5. For **Q 2, Q 3 and Q 4** attempt A and B **OR** C and D.

Q 1 Do as directed (Any fifteen) **15**

1. What are prokaryotes?
2. Prokaryotic flagellar filament is made up of protein known as…..
3. A short rod shaped cell intermediate in shape between cocci and bacilli is called as…….
4. State true or false"All the lipid molecules in cell membrane are amphiphilic in nature"
5. What do you mean by monotrichous bacteria?
6. What is periplasmic space?
7. What are integral membrane proteins?
8. Define virion
9. Give an example of ssDNA virus
10. Name any one cell line used for cultivation of animal viruses.
11. Fill in the blank: In 1892, Dmitrii Ivanowski discovered that the causative agent of _____ was filterable
12. State whether true or false: Viruses lack enzymes for protein synthesis
13. What is plaque?
14. Name any one technique used for identification of viruses
15. State true / false: Eventually population of the microbial growth ceases and the growth curve becomes horizontal in the stationary phase.
16. What do you mean by unbalanced growth of microorganisms?
17. Explain the term generation time.
18. How would you count the viable microbial cells in a given sample?
19. Mention the temperature at which samples are stored in liquid Nitrogen
20. What is the role of ATCC?

Q 2 A	Draw a neat labeled diagram of the structure of the plasma membrane. Enlist the functions of plasma membrane and add a note on membrane proteins.	08
Q 2 B	Compare and contrast between gram positive and gram negative bacterial cell walls.	07
	OR	
Q 2 C	Compare and contrast between prokaryotic and eukaryotic cell.	08
Q 2 D	With a neat labeled diagram explain the structure of prokaryotic flagella.	07
Q 3 A	Elaborate on the four different phases of growth observed on plotting the logarithm of number of viable microorganism versus the incubation time.	08
Q 3 B	Give an account on the different methods used to enumerate the number of microorganisms in a sample mentioning its advantages and disadvantages.	07
	OR	
Q 3 C	Why do you need to preserve and maintain organisms? Explain how you would preserve cultures for a short term period.	08
Q 3 D	Give an account on the mathematical expression for the generation time and the mean growth rate constant inorder to understand the concept of microbial growth.	07
Q 4 A	Explain in detail the general morphology of viruses	08
Q 4 B	Give an account of multiplication of animal viruses	07
	OR	
Q 4 C	Give an account of host range and structure of viruses	08
Q 4 D	Write a note on Influenza virus.	07

Q 5 Write short note on any three of the following **15**

a) Inclusion bodies.

b) Turbidostat

c) Lyophilization

d) Lysogeny

e) Properties used for classification of viruses