

Date:28-02-2022

Registration number:

ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27

M.Sc. MICROBIOLOGY - I SEMESTER

SEMESTER EXAMINATION: OCTOBER 2021

(EXAMINATION CONDUCTED IN – FEBRARY/MARCH 2022)

**MB 7121 – Microbial Diversity**

Time- 2 ½ hrs Max Marks-70

This question paper contains 2 printed pages and four parts

1. **Answer any Five of the following 5X3=15**
2. What are carboxysomes?
3. Differentiate between a phenogram and dendogram.
4. Discuss any 3 kinds of thallus organisations seen in algae.
5. What is the basic principle of numerical taxonomy?
6. Highlight the unique features of the archaeal cell wall.
7. List the characteristic features of r selected species.
8. Draw a comparison between viroids and prions.
9. **Answer any Five of the following 5X5=25**
10. Fungi and plants share a close mutualistic relationship. Justify the statement.
11. How does a bacteriophage decide to become a lysogen?
12. Explain the principle of rRNA sequencing.
13. Discuss the structure of the fungal cell wall.
14. Give an account of aerobic cultivation of bacteria.
15. How are viruses cultivated?
16. Provide an overview of NGS.
17. **Answer any Two of the following 2X10=20**
18. Discuss the various inclusion bodies found in prokaryotes.
19. Explain the replication cycle of Rotaviruses.
20. Describe the life cycle of a typical Basidiomycetes member.
21. **Answer the following 1X10=10**
22. The given graph depicts the absorbance of DNA at 260nm with increasing temperature. The DNA samples have been taken from 4 independent OTUs A, M, R and X. Analyse the graph and answer the following questions.



1. Calculate the melting temperature of the given OTUs from the graph. (2)
2. What can we conclude about the taxonomic relationship of the given OTUs from the graph? Support your response with justified explanation. (4)
3. Explain the principle of the technique used to establish taxonomic relationship. (4)