STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted from the academic year 2019 – 2020 & thereafter)

SUBJECT CODE: 19ZL/MC/MB44

B. Sc. DEGREE EXAMINATION, APRIL 2022
BRANCH VI.A. – ADVANCED ZOOLOGY AND BIOTECHNOLOGY
FOURTH SEMESTER

COURSE : MAJOR – CORE
PAPER : MICROBIOLOGY
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION A

ANSWER ALL THE QUESTIONS. **(10x3 =30)**

1. Mention the application/use of the following:
   a. Fluorescence microscope b. MacConkey agar c. Porcelain filter
2. Give the contribution of the following scientists:
   a. Louis Pasteur b. Alexander Flemming c. Joseph Lister
3. List any three characteristic features of Archaea.
4. Illustrate the bacterial classification based on their shape.
5. Define the following:
   a. psychrophiles b. halophiles c. alkalophiles
6. Relate selective toxicity with any one mode of action of antibiotics.
7. Comment on the Microbiota of mouth during different stages of development.
8. Give the causative organism and mode of infection of the following disease:
   a. Typhoid b. Syphilis c. Pneumonia
9. Distinguish between food borne intoxication and food infection with an example.
10. Give the name of a microorganism involved in the following:
    a. Production of Roquefort cheese
    b. Causing damage to cosmetics
    c. Fermentation in vegetables

SECTION B

ANSWER ANY FIVE QUESTIONS **(5x6=30)**

11. Differentiate between prokaryotic and eukaryotic cells.
12. Illustrate and explain the lytic cycle of T_4 phage.
13. Give a brief account on plasmids and its types.
14. Describe the various methods used to culture anaerobic bacteria.
15. Explain the various stages of a communicable disease progression.
16. Write short notes on food spoilage and its control.
17. Elaborate on the various types of damage caused by microbes to natural fabrics.

SECTION C

ANSWER ANY TWO QUESTIONS **(2x20 = 40)**

18. Elaborate on the smear preparation and staining techniques. Add a note on any two pure culture techniques.
19. Describe the following structures of a bacterial cell in detail:
    a. Peptidoglycan of Cell wall b. Flagellum c. Nucleoid d. Plasma Membrane

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20. Summarise the various forms of Recombination in Bacteria.
21. Discuss the causative agent, symptoms, pathogenicity and control measures of any three Zoonotic diseases.

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