

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**  
**(For candidates admitted from the academic year 2008 – 2009)**

**SUBJECT CODE: ZL/MC/MB44**

**B. Sc. DEGREE EXAMINATION, APRIL 2010**  
**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.**

**(10 x 3 = 30)**

1. Mention the important contributions of the following scientists in the field of microbiology.

a) Louis Pasteur                      b) Robert Koch                      c) Joseph Lister

2. Differentiate Chlamydia and Mycoplasma.

3. Mention the function of these plasmids

a) F plasmid                      b) Ti-plasmid                      c) Cryptic plasmid

4. Explain the following in a sentence.

a) Cocci                      b) Volutin granules                      c) Mesosome

5. Draw a bacterial growth curve and comment on the four phases.

6. Match the following

a) Penicillin	- 1) Inhibition of protein synthesis
b) Gentamycin	- 2) Inhibition of DNA dependant RNA polymerase
c) Rifampin	- 3) Inhibition of cell wall synthesis

7. Name the causative organism of the following diseases.

a) Plague                      b) Cholera                      c) Typhoid

8. Give bacterial, viral and protozoan sexually transmitted diseases (one each).

9. Name a microbe for each of this process.
- a) Oxidation ammonium to nitrite
  - b) Oxidation nitrite to nitrate
  - c) Production of sulfate from organic substrates.
10. Comment on the primary treatment of sewage.

**SECTION B**

**ANSWER ANY FIVE QUESTIONS**

**(5 x 6 = 30)**

11. Explain the use of Gas pack and Streak plate technique.
12. Describe the structure of T<sub>4</sub> phage with a neat labeled diagram.
13. Classify the bacteria based on the nutritional and energy requirements.
14. Write a short note on the role of normal micro-biota of human body.
15. How are the fish and other sea foods spoiled? What are the preventive measures for food spoilage?
16. Explain a) Gram staining    b) Spore staining.
17. Briefly explain the types of transposons.

**SECTION C**

**ANSWER ANY TWO QUESTIONS**

**(2 x 20 = 40)**

18. Describe the structure of cell wall and flagellum in bacterial cells.
19. Differentiate the events during transduction and sex duction processes of bacterial recombination.
20. Write a detailed account on any four airborne diseases and their prevention.
21. Discuss the types of microorganisms that contaminate milk and effectiveness of Pasteurization in clearing such organisms. Add a note on microbiology of ripening of Cheese.

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