



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**M.Sc. DEGREE EXAMINATION – ZOOLOGY**

**FOURTH SEMESTER – APRIL 2023**

**PZO 4501 – MICROBIOLOGY AND IMMUNOLOGY**

Date: 29-04-2023

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

**PART A**

**Answer ALL the questions**

**(10×2=20 Marks)**

1. “Microorganism arise spontaneously” – Justify.
2. Differentiate acidophilic from basophilic stain.
3. Differentiate Obligate from facultative growth.
4. Differentiate potential and kinetic energy with example.
5. Draw the plasmid.
6. What is specialized gene transfer?
7. Comment on attenuated vaccine.
8. List out any four factor affecting immunization.
9. What is Leukogenesis?
10. Comment on stem cell applications.

**PART B**

**Answer any FOUR questions**

**(4×10=40 Marks)**

11. Write two important scientific contributions to microbiology.
12. Describe the microscopical methods to study microorganism.
13. Give an account on gram positive and gram negative bacterial cell wall.
14. Write a paragraph on transfer of the sex factor ‘F’ in Bacteria.
15. Describe the types of autoimmune diseases.
16. Write notes on hematopoietic stem cell.

**PART C**

**Answer any TWO questions**

**(2×20=40 Marks)**

17. Discuss different theories on origin of microbes.
18. What are types of replication? Explain the mechanism of DNA replication in prokaryotes.
19. Write an essay on the types of vaccines.
20. Explain the evolutionary relationship of lymphoid organ in sea Urchin, Drosophila, Xenopus, Zebrafish and Mice.

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