

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



M.Sc. DEGREE EXAMINATION – ZOOLOGY

FOURTH SEMESTER – APRIL 2018

16PZO4MC01– MICROBIOLOGY AND IMMUNOLOGY

Date: 18-04-2018

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

PART A

Answer all the questions

(10×2=20 marks)

1. Define the following: (i) pure microbial culture (ii) enrichment culture media
2. How is the microbial motility test performed?
3. What is meant by glycocalyx?
4. Differentiate between heterotrophs and chemolithotrophs with suitable examples.
5. Draw and label the steps in transduction.
6. What is the role of topoisomerases and primase in prokaryotic DNA replication?
7. What is meant by acquired immunodeficiency?
8. Enlist the steps in the life cycle of B lymphocyte.
9. What is meant by antiserum?
10. How does vaccination help an individual to combat infectious diseases?

PART B

Answer any FOUR questions

(4×10=40 marks)

11. What is the theory of spontaneous formation of organic molecules? Discuss how the Miller-Urey experiment was used to demonstrate this theory.
12. Discuss the different factors that influence microbial growth.
13. Describe the structure of bacterial endospores and the process of sporulation.
14. Write a note on bacterial conjugation.
15. Explain the different primary immunodeficiency disorders.
16. Give an account on the process on elimination of self –reactive B cells in bone marrow.

PART C

Answer any TWO questions

(2×20=40 marks)

17. Explain the methods used in identification and isolation of microbes in cultures.
18. Discuss the different types of DNA repair mechanisms in prokaryotes.
19. What are the different types of immunoglobulins? Discuss their structure and functions.
20. Describe the mechanism of gene rearrangements in the immunoglobulin genes for cell surface antibody expression.
