15U619 (Pages: 2) Name: ……..…….

Reg. No…….……

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2018

(CUCBCSS - UG)

CC15U ZO6 B14 - BIOTECHNOLOGY, MICROBIOLOGY AND IMMUNOLOGY

Zoology - Core Course

(2015 Admission)

Time: Three Hours Maximum: 80 Marks

Give illustrations wherever necessary

A. Answer ***all*** ten questions. Each question carries 1 mark.

1. What are restriction enzymes?
2. What are Prions?
3. What are NK cells?
4. What is BCG?
5. Define retrovirus with an example.
6. Name the immunoglobulin which can penetrate placenta.
7. Explain the role of dendritic cells.
8. What are plasmids? Give an example.
9. Name the cell obtained by fusing a B-lymphocyte with a tumour cell.
10. Mention the importance and uses of single Cell proteins.

(10 x 1 = 10 Marks)

B. Answer any ***ten*** of the following questions. Each question carries 2 marks.

11. Explain epidemiology and its importance.
12. Explain the staining techniques in microbiology.
13. Differentiate between Rickettsia and mycoplasma.
14. Explain the structure of a typical virus.
15. Write a short note on RIA.
16. What is immunotherapy?
17. Give an account of agglutination inhibition method
18. Write a short note on Thymus.
19. Explain knockout mice.
20. What are biosensors?
21. Distinguish between primary and secondary cultures.
22. What is molecular pharming?

(10 x 2 = 20 Marks)

C. Answer any ***five*** of the following questions. Each question carries 6 marks.

23. Give an account of different types of vaccines.
24. Explain the structure of a typical bacterium. Comment on the major groups.
25. Write an account on the uses of microorganisms in industry.
26. Discuss about organ specific autoimmune diseases.
27. Explain Western blotting and its significance.
28. Discuss about different molecular markers and their uses.
29. Discuss about the different enzymes used in rDNA technology.
30. Explain the mechanism of bioremediation.

(5 x 6 = 30 Mark)

D. Answer any ***two*** of the following questions. Each question carries 10 marks.

31. Write an essay on the major organs of the immune system.
32. Explain the major human diseases caused by bacteria.
33. Explain the structure of a typical immunoglobulin molecule. Discuss their biological functions.
34. Write an essay on transgenic organisms. Explain the different transfection methods.

(2 x 10 = 20 Marks)

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