TDC (CBCS) Even Semester Exam., 2023

BIOTECHNOLOGY

(Honours)

(4th Semester)

Course No. : BTCHCC–402T

(Immunology)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer any *ten* of the following questions : 2×10=20

1. Write about T-lymphocytes and B-lymphocytes.

2. Write down the functions of helper T-cells.

3. Differentiate between acquired immunity and innate immunity.

4. Define allelic exclusion.

5. Write about epitope and paratope.

6. Write a note on allotype and idiotype.

7. What are the functions of MHC molecules ?

8. Define opsonization.

9. How does the innate immune system recognize and respond to bacteria?

10. Mention some physical and chemical barriers that prevent the entry of pathogen into the human body.

11. What do you mean by inflammatory response?

12. Write a note on myasthenia gravis.

13. What are adjuvants?

14. Write a note on active and passive immunization.

15. Write down the application of ELISA.

SECTION—B

Answer any *five* of the following questions : 6×5=30

16. What are immunoglobulins? What are the types of immunoglobulins? Give a brief account on molecular structure of IgG. 1+1+4=6

17. Write down the mechanism of antibody maturation and class switching. Add a note on T-cell receptor. 4+2=6

18. What is clonal selection theory? Give a detailed account on immunologic memory. 3+3=6

19. Give a brief account on heavy chain gene rearrangement. Add a note on antibody diversity. 5+1=6

20. Briefly describe the structure of MHC Class–II molecule. How does MHC Class–I molecule differ from MHC Class–II molecule? 4+2=6

21. Write a note on antigen processing and presentation by MHC Class–I molecule. 6

22. Write short notes on the following : 3+3=6

(a) Hashimoto's disease

(b) Rheumatoid arthritis

23. What do you mean by immunodeficiency? Give a brief account on HIV infection. 2+4=6

24. What are cytokines? Mention the role of cytokines in regulating immune response. Add a note on viral vaccine. 1+2+3=6

25. Write short notes on the following : 3+3=6

(a) Sandwich ELISA

(b) RIA

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