

**2024/FYUG/EVEN/SEM/
BTCSEC-151T/108**

FYUG Even Semester Exam., 2024

BIOTECHNOLOGY

(2nd Semester)

Course No. : BTCSEC-151T

(Immunology)

Full Marks : 50

Pass Marks : 20

Time : 2 hours

**The figures in the margin indicate full marks
for the questions**

SECTION—A

Answer any fifteen of the following questions:

1×15=15

- 1. Define immunity.**
- 2. What is humoral immune response?**
- 3. Define hemotopoiesis.**
- 4. What is class switching?**

5. What is clonal selection theory?
6. What are idiotypes?
7. What is J-chain?
8. Define allergens.
9. What is antigen presenting cell?
10. Define haplotype.
11. What do you mean by endogenous antigens?
12. What is transmembrane glycoprotein in MHC molecules?
13. Define autoimmune disease.
14. Write down the symptoms of myasthenia gravis.
15. What is inflammation?
16. What is the full form of AIDS?
17. What is an adjuvant?
18. What is cytokine?

19. Define vaccination.

20. Define RIA.

SECTION—B

Answer any five of the following questions :

2×5=10

21. Write a note on adaptive immunity.
22. Write about T-lymphocytes and B-lymphocytes.
23. Write a note on immunologic memory.
24. What are the properties of an antigen?
25. Define HLA.
26. What is self-antigen and non-self-antigen?
27. Write a note on SLE.
28. What is immunosuppressant?
29. Differentiate between active immunity and passive immunity.
30. Write a note on immuno-electrophoresis.

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SECTION—C

Answer any five of the following questions :

5×5=25

31. Write a note on different types of immunoglobulins. Give a brief account on structure of IgG. 2+3=5
32. Briefly describe the structure of TCR. Add a note on B-cell activation. 2+3=5
33. Define antibody diversity. Add a note on genetic basis of antibody diversity. 1+4=5
34. Write a note on heavy chain gene transcription. 5
35. Describe the structure of MHC-class I molecule. Add a note on antigen processing by MHC-class I molecule. 2+3=5
36. Describe the structure of MHC-class II molecule. Add a note on antigen processing by MHC-class II molecule. 2+3=5
37. Write notes on the following : 2½×2=5
- (a) Hashimoto's disease
- (b) Rheumatoid arthritis

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(Continued)

(5)

38. Write a brief note on HIV infection. 5
39. Define vaccine. Write a note on different types of vaccines. 1+4=5
40. Define ELISA. Give a detailed account of principle and applications of ELISA. 1+2+2=5

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