

**20P314**

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Name.....

Reg. No.....

**THIRD SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2021**

(CBCSS-PG)

(Regular/Supplementary/Improvement)

**CC19P ZO3 C07- IMMUNOLOGY AND CELL BIOLOGY**

(Zoology)

(2019 Admission onwards)

Time: Three Hours

Maximum: 30 Weightage

I. Answer any *four* questions.

1. Differentiate between heavy chain and light chain rearrangement of immunoglobulin gene.
2. Explain cross reactivity with suitable examples.
3. Define ELISA. Mention its different types.
4. With examples explain the stimulating and blocking action of autoantibodies.
5. Explain stochastic model and instructive model involved in T cell maturation.
6. Comment on the MHC gene arrangement in human and mice.
7. Write notes on the functions of microvilli on cell membrane.

**(4 × 2 = 8 Weightage)**

II. Answer any *four* questions.

8. What are the various factors which determine the immunogenicity of an antigen?
9. Explain the structure of TCR-CD3 complex.
10. Write notes on cytokine antagonists with examples.
11. Explain Antigen presenting pathway involving proteasome complex.
12. Briefly explain various methods involved in active immunization.
13. Comment on different types of molecules involved in cell to cell interactions.
14. Add notes on the genes involved in apoptosis.

**(4 × 3 = 12 Weightage)**

III. Answer any *two* questions.

15. Give an account of various pathways of membrane attack complex formation and its regulation.
16. What are hypersensitivity reactions? Explain the immune response involved in various types of hypersensitivity reactions and consequences.
17. Discuss various signaling pathways involved in G protein coupled receptor activation.

18. Explain the structure of Immunoglobulin. Comment on its different classes and properties.

**(2 × 5 = 10 Weightage)**

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