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BTS 503

III Semester M.Sc. Degree Examination, December 2018

BIOTECHNOLOGY

Immunotechnology

Time : 3 Hours

Max. Marks : 70

Write short notes on **any ten** of the following (**not exceeding 1 page each**). **(10×2=20)**

1. a) NK cells.
- b) Opsonization.
- c) Macrophage activation.
- d) Haptens and immunogens.
- e) Tumor antigens.
- f) Monoclonal antibodies.
- g) Immunotoxins.
- h) Precipitation reaction.
- i) Edible vaccines.
- j) Class switching.
- k) Epitopes.
- l) LPS.

Write explanatory notes on **any five** of the following (**not exceeding 3 pages each**). **(5×6=30)**

2. Origin, maturation, proliferation and differentiation of B cells.
3. Types of antigen presenting cells and mode of antigen presentation.
4. Cytokines and their mode of action.
5. Autoimmune disorders.
6. Cytotoxic T lymphocytes and target cell death.
7. MHC structure and function.
8. Differentiate between adaptive and innate immunity.
9. ELISA.

P.T.O.



Answer **any two** of the following (**not** exceeding **5** pages **each**). **(2×10=20)**

10. Elaborate on vaccine production. Mention the different kinds of vaccines with suitable examples.
 11. What is hypersensitivity ? Describe the different types of hypersensitivity using suitable examples.
 12. Complement factors are significant to any immune response. Describe the three pathways of complement activation.
 13. Give a detailed account on the immunoglobulin structure. Add a note on the biological functions of each class of immunoglobulins.
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