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PAR-003-1132002 Seat No. _____

M. Sc. (Biotechnology) (Sem. II) (CBCS) (W.E.F. 2016) Examination

August / September - 2020

BT-207 : Immunology

Faculty Code : 003

Subject Code : 1132002

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

1 Answer any **seven** of the following : (2 Marks each) **14**

(a) Define the terms allotype and idiotype.

(b) State the difference between MHC Class-I and MHC Class-II molecules.

(c) Comment on "recombinant antibodies".

(d) What is sandwich ELISA?

(e) What is hapten?

(f) What is the role of antigen presenting cell?

(g) What is antigenicity?

(h) What is immunodeficiency?

(i) What are cytokines?

(j) Define the term "super antigens".

2 Answer any **two** of the following : (7 Marks each) **14**

(a) Explain innate immune system as a first line of defense against invading pathogens.

(b) Give a detailed account on organs of the immune system.

(c) What is adjuvant? Discuss various types of adjuvant and its importance in vaccine design.

3 Answer the following : (7 Marks each) **14**

(a) Describe various types of Immunoglobulins.

(b) Discuss principle and applications of Radio Immunoassay.

OR

3 Answer the following : (7 Marks each) **14**

(a) What is immunogenicity? Discuss various factors influencing immunogenicity.

(b) Discuss in general about immunological diversity.

4 Answer the following : (7 Marks each) **14**

(a) Give a detailed account on HLA typing methods.

(b) What is hypersensitivity? Enlist various types of hypersensitive reactions and explain immediate hypersensitivity in detail.

5 Answer any **two** of the following : (7 Marks each) **14**

(a) Discuss about lymphocyte development and activation.

(b) Write a note on autoimmune diseases.

(c) Give a general account on various types of vaccines.

(d) Explain monoclonal antibodies in detail.
