

NTK/KW/15–5879

Fourth Semester B. Sc. Examination

BIOTECHNOLOGY

Paper – I

(Immunology)

Time : Three Hours]

[Max. Marks : 50

N. B. : All questions are compulsory and carry equal marks.

1. Describe various cells of immune system.

OR

Define innate immunity and discuss its mechanism.

10

2. What are various classes of immunoglobulins ? Describe in detail the structure of IgG.

OR

Explain T cell mediated immune response.

10

3. (a) Describe delayed hypersensitivity. 5

- (b) Describe anaphylaxis. 5

OR

- (c) Give an account on historical development of vaccination. 5

- (d) Compare live and killed vaccines. 5

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Contd.

4. (a) Explain radial immunodiffusion. $2\frac{1}{2}$
 (b) Explain haemagglutination. $2\frac{1}{2}$
 (c) Describe ELISA test for diagnosis of AIDS. $2\frac{1}{2}$
 (d) Give salient features of complement fixation test. $2\frac{1}{2}$

OR

- (e) Describe in-direct Coomb's test. $2\frac{1}{2}$
 (f) Write a note on hybridoma technology. $2\frac{1}{2}$
 (g) Give applications of monoclonal antibodies. $2\frac{1}{2}$
 (h) Explain any one precipitation reaction with example. $2\frac{1}{2}$
5. (i) Define antigenicity. 1
 (ii) What is hapten ? 1
 (iii) What is MALT ? 1
 (iv) What are cytokines ? 1
 (v) What is ADCC ? 1
 (vi) Give significance of NK cell. 1
 (vii) What is allergen ? 1
 (viii) Define autoantigen. 1
 (ix) What is combined vaccine ? 1
 (x) What is Sandwich ELISA ? 1
 (xi) What is titre ? 1
 (xii) Give application of Widal test. 1