

(i) Printed Pages : 2

Roll No.

(ii) Questions : 9 Sub. Code :

1	3	8	6	3
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Exam. Code :

5	0	5	4
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B.Sc. (Hons.) (Bio-Technology) FYUP 4th Semester
(2056)

IMMUNOTECHNOLOGY

Paper : BTED401

Time Allowed : Three Hours] [Maximum Marks : 68

Note :— Attempt **five** questions in all. Q.1 is compulsory and attempt any **two** questions from each unit.

1. Answer briefly:

- (a) Lectin cell adhesion molecules
- (b) MAC
- (c) D gene segment
- (d) TI 1 antigens
- (e) Grave's disease
- (f) $\gamma\delta$ TCR.

2×6=12

UNIT-I

2. (a) Explain the alternative pathway of the complement system. 8
- (b) Discuss the biological consequences of complement activation. 6

3. (a) Describe the role of integrins and selectins in lymphocyte trafficking. 7
(b) Explain the applications of monoclonal antibodies produced by hybridoma technology. 7

UNIT-II

4. (a) Differentiate between T-dependent and T-independent antigens in B-cell activation. 7
(b) Explain the sites of induction of humoral responses in vivo. 7
5. (a) Describe the mechanism of gene rearrangement in immunoglobulin light and heavy chains. 7
(b) Explain the process of class switching among constant region genes. 7

UNIT-III

6. (a) Compare Type II and Type III hypersensitivity reactions. 7
(b) Explain the mechanisms proposed for induction of autoimmunity. 7
7. (a) Discuss Hashimoto's thyroiditis as an organ-specific autoimmune disease. 7
(b) Explain systemic lupus erythematosus as a systemic autoimmune disease. 7

UNIT-IV

8. (a) Describe the organization and inheritance of the MHC complex. 7
(b) Explain the regulation of MHC expression. 7
9. (a) Explain thymic selection of the T-cell repertoire. 7
(b) Discuss the process of T-cell activation and differentiation. 7