M.TECH DEGREE EXAMINATIONS: JUNE 2013

Second Semester

BIOTECHNOLOGY

BTY555: Immunotechnology

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-

PART B (10 x 2 = 20 Marks)

1. Write a note on hematopoiesis.

2. List the biological consequence of complement activation.

3. Describe the structure of immunoglobulin.

4. Detection of M protein.

5. Give the applications of Cr51 assay in immunotechnology.

6. Write about NK activity measurement.

7. What is reverse vaccinology?

8. How vaccine is designed for active immunization?

9. Mention the principle of immunocytochemistry.

10. List the applications of immunohistocytochemistry.

PART C (5 x 16 = 80 Marks)

11. a) i) Describe in detail with suitable diagrams the innate and adaptive immune (8)
system.
    ii) Describe about the cell mediated immune response. (8)

(OR)

   b) i) List the factors that impact immunogenicity and explain about humoral immune (10)
response.
    ii) Elaborate on the role of secondary lymphoid organs. (6)

12. a) i) With suitable figures detail about immuneelectrophoresis. (12)

    ii) Write about Plaque Forming Cell Assay. (4)

(OR)

   b) How monoclonal antibodies are produced, write about the various uses and
applications of mAbs in immunotechnology.

13. a) i) What is PBMC? How PBMC is obtained? Mention its application in (10)
immunotechnology.
    ii) How Cryo-preservation of cells of immune system is carried out? (6)

b) i) Mention various cell sorting techniques in immunobiology. 4

ii) Describe on how FACS is applied in the field of immunotehcnology? 12

14. a) i) What is whole organism vaccine? Describe its production in detail with apt (8) examples.

ii) What are multi subunit vaccines? Describe its production in detail with apt (8) examples.

(OR)

b) How recombinant antigens used as vaccines? Explain the production and application. Write about a case study of one recombinant vaccine.

15. a) What are catalytic antibodies? How they are generated? Describe about them in detail.

(OR)

b) How Combinatorial libraries for antibody are synthesized? What are the possible applications of it in immunobiology?

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