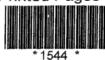
- 5. Attempt any two parts of the following:
- 10×2=20
- (a) Explain the concept of graft rejection and the importance of immunosuppressive therapy in organ transplantation in humans.
- (b) What are the functions of complement system? Explain briefly the pathways for activation of complement system.
- (c) Write the immunological functions of :
  - i) B lymphocytes
  - T lymphocytes
  - iii) Neutrophils
  - Bone marrow iv)
  - V) Interferon (IFN)

Printed Pages: 4



429

**NBT-404** 

PAPER ID: 154414

Roll No.

B. Tech. (IV Sem.) Even Semester

(Following Paper ID and Roll No. to be filled in your Answer Book)

SPL. THEORY EXAMINATION, 2014-15

**IMMUNOLOGY** 

Time: 3 Hours

[Total Marks: 100]

Note: Attempt all questions. All questions carry equal marks.

Attempt any four parts of the following: 1.

5×4=20

- (a) Differentiate between humoral and cell mediated immune response.
- (b) What are epitopes? Describe the characteristics of B and T cell epitopes.
- (c) Write a short note on the regulation of immune response.

154414]

(4)

300

1544141

(1)

[Contd...

www.uptuonline.com

- (d) Differentiate between passive and active immunization.
- (e) Explain delayed hypersensitivity reaction.
- (f) Explain terms autograft, allograft and xenograft with examples.
- 2. Attempt any <u>four</u> parts of the following: 5×4=20
  - (a) What are the major factors that can affect immunogenicity of an antigen?
  - (b) Explain the concept of positive & negative selection during T-cell maturation.
  - (c) What are haptens? How can they be used in the study of antigenicity?
  - (d) On what factors does the formation of an Ag-Ab lattice depend? Also explain the precipitation curve formed in antigen antibody interaction.
  - (e) What is the principle of Radioimmuunoassay? Explain.
  - (f) What is immune tolerance? Explain.

- 3. Attempt any two parts of the following:  $10 \times 2 = 20$ 
  - (a) What are T-cells? Where do they form and mature? Explain in brief, their maturation, activation and differentiation.
  - (b) Describe the structure and function of immunoglobulins.
  - (c) What is the difference between Monoclonal antibodies and polyclonal antibodies? Explain the hydridoma technology used for the production of monoclonal antibodies.
- 4. Attempt any two parts of the following: 10×2=20
  - (a) What do you mean by antigen processing and presentation? Explain the Cytosolic pathway of the presentation.
  - (b) Differentiate between a benign and malignant tumor. Briefly describe tumor antigens. What are the possible approaches for treatement of cancer?
  - (c) What are the four cardinal signs of inflammation? Explain the mechanism of inflammation in detail.