

M. TECH. (BIOTECHNOLOGY)

THIRD SEMESTER EXAMINATION, 2009-10

IMMUNOTECHNOLOGY

Time : 3 Hours

Total Marks : 100

- Note : (i) Attempt any FIVE questions.
(ii) Marks are indicated against each question.

1. (a) Comment on the role of cytokines which play a role in B cell activation during the production of antibodies. Name the primary and secondary mediators of inflammation. Which cytokines are secreted by activated human mast cells? 15
- (b) Comment on the therapeutic potential of interferons. 5
2. (a) How does the dose and route of administration of antigens affect the immune response of the human body? Give methodological details of purification of antibodies from blood employing an immunoadsorbant. 15
- (b) What are the disadvantages of use of polyclonal antibodies? 5
3. (a) Give an account of the production of the following : 10
 - (i) Chimeric monoclonal antibody
 - (ii) Humanized monoclonal antibody
- (b) Give the flow chart of the production of monoclonal antibodies by hybridoma technology. Give three practical uses of monoclonal antibodies. 10

Give an account of the mechanisms adopted by HIV to evade the surveillance of the host immune system. How does the virus cause the immune suppression in the host? What is HAART therapy? *K-453* 10

Comment in brief about the uses of live attenuated microorganisms, toxoids and killed microorganisms in vaccine preparation. What are DNA vaccines? 10

Write notes on the following: 15

- (i) Allograft
- (ii) Isograft
- (iii) Xenograft
- (iv) HLA typing
- (v) Generalized immune suppression

Which test should be performed in the donor and recipients prior to kidney transplantation to ensure successful transplantation? 5

Draw a labeled diagram of HIV virus showing its components. What is the significance of 'gag', 'pol' and 'env' sequences of the HIV genome? 15

Explain the mechanism of evasion of immune response by tumors. 5

short notes on any Four of the following : 5 x 4 = 20

Interferons

Immunotherapy for asthma

Immunodiagnosis of infectious agents