

**R09**

**Code No: D0305**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD  
M.Tech II - Semester Examinations, March/April 2011  
ADVANCED IMMUNOLOGY AND IMMUNOTECHNOLOGY  
(BIOTECHNOLOGY)**

**Time: 3 hours**

**Max. Marks: 60**

**Answer any five questions  
All questions carry equal marks**

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1. What is cell mediated immunity? How does it defend the body against invading pathogens and foreign cells? [12]
2. Write short notes on the following:  
a) Opsonization.  
b) Complement activation.  
c) Cell mediated cytotoxicity. [4 + 4 + 4]
3. Describe the T-Cell receptor and its function. Trace the pathway of cell mediated immune response from the event of antigen recognition. [6 + 6]
4. Describe the mechanism of cell memory for both T and B cells of the immune system. [12]
5. What is meant by T cell cloning? Explain briefly the methods adopted for creating the clone. [12]
6. Explain, what is Cyto-immunotherapy, and under what circumstances such therapy advised? [12]
7. Write briefly on:  
a) Aluminum Salt (Alum) adjuvant.  
b) Oil-in-Water Emulsions. [6 + 6]
8. List out at least three types of effective, common adjuvants in use giving their properties, mechanism of action and limitations. [12]

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