

**BITS PILANI, DUBAI CAMPUS
DUBAI INTERNATIONAL ACADEMIC CITY
FIRST SEMESTER 2013-2014
COMPREHENSIVE EXAMINATION**

COURSE NO.: BIOT C416

7.1.2014

MAXIMUM MARKS: 40

COURSE TITLE: IMMUNOLOGY

DURATION: 3 Hours

Answer to the point; Answer all questions in the given sequence

- Q1. (a)(i) What do you understand by Ig Cass switching? Briefly explain the mechanism. (2)
ii) What role does RAG1/2 play in antibody production? (1)
(iii) What is the reason that scientist have not been able to design effective vaccine for HIV? (1)
(b) Explain to a BIO C111 student how your immune system accomplishes transplant rejections, and why. The Graft rejection occurs in two stages, what happen during these two stages, explain briefly? (3)
(c). Diagrammatically show various phases in B cell maturation (2)
(d) How is the expression of MHC regulated? (2)
- Q2 (a) What is the difference between systemic and organ specific autoimmune diseases .List out any 2 organ specific disease and how these are caused? (3)
(b). Differentiate between primary and secondary lymphoid organs .Describe the role of a lymphoid organ that plays a major role in mounting immune response to antigens in the blood stream (2)
(c) What are DNA vaccines? What are their advantages? (2)
(d) What is the difference between positive and negative selection of T cells .What is the significance of this type of selection? (2)
- Q3. (a) After lab analysis of certain cells it was found that they have reduced MHC-1 expression, what would be the possible reason for such a reduced expression? What type of cells would take care of such situation? Explain (3)
(b) How does the body differentiate between the natural bacterial flora of the body from an infectious pathogen? What are opportunistic pathogens, with the help of an example explain the situation when they cause disease? (3)
(c) List out the biological functions of Cytokines .Briefly explain their role in providing non specific immunity (2)
(d) There are various ways by which immunogenicity can be influenced .Justify (2)
- Q4. (a) Explain what allelic exclusion is and what is its significance? (1)
(b) Naïve T cells require more than one signal for activation and subsequent proliferation into effector cells. Justify the statement .What will happen if any of these signals are absent? (3)
(c) Differentiate between exogenous and endogenous antigens .Explain the mechanism by which the antigen peptides are transported to ER. (3)
(d) What do you understand by complement system? What are their major functions? List out the pathways of complement activation? (3)

*****GOOD LUCK *****