RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

B.A./B.SC. SIXTH SEMESTER EXAMINATION, MAY-JUNE 2013

THIRD YEAR

Date : 28/05/2013 **Microbiology (Honours)**

Time : 11am – 1pm Paper : VII Full Marks : 50

Group-B

1. Answer **any five** of the following: 2x5
   - i) What do you mean by antigenicity and immunogenicity? 2
   - ii) What is clonal selection theory? 2
   - iii) What is MAC? 2
   - iv) What is tubercle? Write the names of two drugs used in tuberculosis treatment. 2
   - v) What is passive immunity? Give an example. 2
   - vi) What is antigenic drift and antigenic shift? 2
   - vii) What are the types of vaccines used to prevent infection by polioviruses? 2
   - viii) What do you mean by dimorphic fungus? 2
   - ix) What is tamiflue? 2
   - x) What is Prozone effect? 2

2. Answer **any four** of the following: 10x4

   A. a) How does influenza virus cause symptoms associated with flu? 2
   b) What are opportunistic pathogens? Explain them in relation with AIDS? 2
   c) What are the latent antigen produced by E.B.V? 2
   d) What are the viral proteins present in poliovirus? 2
   e) What are the characteristic features of Adenovirus? 2

   B. a) Mention the differences between innate and adaptive immunity. 3
   b) What are the characteristics of antigen to be a good immunogen? 3
   c) Briefly describe the procedure immunoelectrophoresis. 4

   C. a) Higher the therapeutic index, better the antibiotic- explain. 2
   b) Write down the mode of action of aminoglycoside antibiotics. 2
   c) Name the different groups of antifungal drugs acting on cell membrane with their brief mode of action. 3
   d) Write down the mode of action of acyclovir. 3

   D. a) Which parts of the body can be affected by *Candida albicans*. 2
   b) State the prevention and treatment of candidiasis. 4
   c) Describe the pathogenicity and mode of action of cholera toxin. 4

   E. Indicate whether the following statements are true or false and justify: 4x2½
   a) I_gM functions more effectively than I_gG in complement activation.
   b) An antibody secreting plasma cell can secrete all five classes of antibody molecules.
   c) An $HGPRT^-$ myeloma cell requires hypoxanthine for growth.
   d) Two different monoclonal antibodies never bind same antigen molecule.

   F. a) What is type I hypersensitivity reaction? Briefly describe the mechanism.
   b) How would you differentiate between precipitation reaction and agglutination reaction?

c) What is recombinant vaccine?
d) What types of lymphocytes would be expected to proliferate in lymph nodes if a mouse is immunized with a soluble protein. 3+3+2+2

G. a) What is Plasmapheresis? When do you think it is used in a hypersensitive reaction? 2+2
b) Repeated blood transfusions between same blood group individuals can still induce immune response- Explain. 2
c) What are Allergen? 2
d) What are anaphylotoxins? 2

H. a) Explain the Radioimmunosorbent test for assaying hypersensitivity? 3
b) What is the composition of enzyme C3 convertase in complement pathway? What reaction does it catalyse? 2+2
c) What is P K reaction? What is rhogum antibody? 1½+1½