

Bangabasi College
B.Sc. Part-III -Test Examination, 2014
Subject : Zoology
Full Marks : 100

Paper V – Unit I (Microbiology, Parasitology and Immunology) (Marks:20)

Answer Q1 and two from the rest

- 1) Answer any four questions: 2 X 4 = 8
- a) Define fluorochrome with its uses in medical microbiology and microbial ecology.
 - b) What is elephantiasis? How is it caused?
 - c) Why Freund's complete antigen is more potent than the incomplete form for boosting up the immune system?
 - d) Define pasteurization. How milk can be pasteurized commercially?
 - e) Name the infective stage of *Fasciola* and describe it.
 - f) What do you mean by clonal expansion and clonal energy?
 - g) Mention the location and function of class I and class II MHC regions.
 - h) Why most antimicrobial chemical agents are disinfectants rather than sterilants.
- 2)
- i) Mention the nature and function of different inclusion bodies in prokaryotes.
 - ii) Discuss how macrophages mediate cytotoxicity by oxygen dependent and oxygen independent mechanisms. 3 + 3
- 3)
- i) Write the severity of the disease condition formed by *Plasmodium falciparum*.
 - ii) Give a schematic diagram of the development of parasite within hepatocytes and RBC. 3 + 3
- 4)
- a) Write the uses of scanning tunneling microscope and atomic force microscope in modern microbiology.
 - b) Mention the location and function of class I, and class II MHC regions. 3 + 3
- 4) What is obstructive filariasis? How is it caused? Give a brief idea on the life cycle of the causative organism. 1.5+1.5+2
- Or;
- Enumerate the role of TH cells in B-cell activation. 6
- 6) What are depth filter and membrane filters? How are they used to sterilize liquids? 3 + 3
- Or;
- Describe how specimens are prepared for viewing in the TEM. What are negative staining, shadowing and freeze-etching? 3 + 3
- Or;
- What is the principal growth factor for T cells? Illustrate the sequential events for initiation of the T cell response. 3 + 3
- 7) i) Name several lymphokines and describe their role in immune response. 3 + 3
- Or;
- Describe the cystic stages of *Entamoeba histolytica*. How ulcerations are caused at the intestinal lesion forming areas during amoebiasis? 3 + 3
- Or;
- Name the causative agent and the mode of infection of cholera. Discuss the pathogenicity and the endemicity of the disease. What the prophylaxis measures should be taken for the disease. 1.5 + 3 + 1.5