

**Kalyani Mahavidyalaya**

**Part-II Honours Test Examination-2017**

**Subject: Molecular Biology & Biotechnology**

**Paper-V**

**USE SEPARATE SHEETS FOR EACH UNIT**

**Full marks - 50**

**Time – 2hrs**

Unit A (Microbiology)

**Marks - 20**

1. Answer any five

5\*2=10

- a) Compare sterilization and disinfection.
- b) Discuss the conditions influencing the effectiveness of antimicrobial agent activity?
- c) How chlorine gas works as disinfectant for purification of water supplies?
- d) What is Agar-Agar? State its use in microbiology.
- e) Give example of ionic radiation and state how it works to kill microbe.
- f) What are selective and differential media? Give example of each.
- g) What is HEPA filter?

2. Answer any two

2\*5=10

- a) How temperature can be used to control growth of microbes?
- b) Discuss germ theory of disease and Koch's postulates?
- d) Compare the membrane system of Gram negative and Gram positive bacteria.

A. Answer any five:

5\*1

1. Interferon, secreted by \_\_\_\_\_.
2. Acquired immune system can distinguish subtle difference between antigens. T/F
3. In birds, the maturation of the B cells takes place in the \_\_\_\_\_.
4. T cells differentiate from the hematopoietic stem cells \_\_\_\_\_.
5. CD3 molecules remain closely associated with T cell receptor and aid in recognition of antigens .T/F.
6. When APC express antigens along with MHC Class II, \_\_\_\_\_ recognize the antigen .
7. In order to elicit an immune response, a molecule must be recognized as nonself.(T/F).
8. Maturation T cells occurs in the thymus. T/F.

B. Answer any five:

5\*2

1. All molecules that have the property of immunogenicity also have the property of antigenicity, the reverse is not true... explain.
2. Define Haptane.
3. What is tolerance?
4. The degree of its immunogenicity depends on the degree of its foreignness.... Explain.
5. What is the fate of Memory B cell?
6. What is opsonization?
7. Define Allotype.

C. Answer any three:

5\*3

1. Describe the structure of Antibody.
2. What is humoral immunity? Differentiate between Primary and secondary immune response. 2+3
3. Define paratope. Name the antibody that readily cross the placenta and the antibody that is produced during primary immune response. What is the role of MHC. 2+2+1
4. (a) Peripheral lymphoid organs are designed to maximize contact between antigen and lymphocytes – T/F  
 (b) Hematopoietic stem cells are multi-potent which means that they are capable of developing into any blood cells – T/F  
 (c) Lymphocytes acquire antigen specificity before they encounter antigen – T/F  
 (d) B-lymphocytes are non-phagocytic in nature – T/F  
 (e) Eosinophils can ingest and damage large intracellular parasites – T/F