

**NOTE:**

1. Attempt all questions.
2. All questions carry equal marks.
3. Draw neat labeled diagrams wherever necessary.
4. For Q 2, Q 3 and Q 4 attempt A and B OR C and D.

**Q 1 Do as directed (Any fifteen)**

15

1. Tc cell contain \_\_\_\_ surface receptor  
( CD4, CD8, MHC, CD48)
2. Give one example of a phagocytic cell.
3. Write one function of the NK cell.
4. Monocyte become mature and differential into \_\_\_\_  
( macrophage, t cells, nerve cell, b cell)
5. Basophils can stain by \_\_\_\_\_ blue dye.  
( methylene, bromothymol, safranin, crystal)
6. Give any one role of plasma B<sub>2</sub> cells.
7. Find the correlation- B-cell activation: Bone marrow:: T cell activation : \_\_\_\_\_.  
(Thymus, Spleen, Lymph nodes, Bone marrow)
8. Name correceptors present in B cell.
9. Name any two invariant chains present in CD3.
10. Which type of cells expressed the glycoprotein encoded by Class I MHC genes?
11. State true or false- Class II MHC molecules contain two different polypeptide chains, a 33-kDa  $\alpha$  chain and a 28-kDa  $\beta$  chain, which are associated by noncovalent interactions.
12. What is proteasome?
13. How many amino acids long peptides can bind to MHC class II?
14. What is the full form of ELISA?
15. Fluorochrome-labeled cells are viewed under a \_\_\_\_\_ microscope.  
( fluorescence, dissection , compound, light )
16. The most commonly used luxogenic substrate in chemiluminescence is \_\_\_\_\_.  
(Luminol, chromogen, fluorescein, Phycoerythrin)
17. What is precipitin reaction?
18. The most commonly used Chromogenic substrate is \_\_\_\_\_.  
(tetramethylbenzidine TMB, Luminol, fluorescein, Phycoerythrin)
19. What do you mean by agglutinin.
20. Most commonly used Fluorochrome are \_\_\_\_\_.  
(fluorescein, tetramethylbenzidine TMB, Luminol, indolyl)

**Q 2A** Write a note of thymus with the help of a diagram.

08

- Q 2B** Explain granulocytes and agranulocytes cells in details 07  
**OR**
- Q 2C** Give an account on the lectin pathway. 08  
**Q 2D** Discuss regulations of complement system. 07
- Q 3A** Explain the structure of MHC class I with the help of a diagram. 08  
**Q 3B** Write a note on how TH cells help in B-cell activation. 07  
**OR**
- Q 3C** Discuss the detailed process of endocytic pathway of exogenous antigens processing. 08  
**Q 3D** Explain the peptide interaction with MHC class I. 07
- Q 4A** Explain in detail about indirect ELISA 08  
**Q 4B** Diagrammatically explain about two dimensional immunoelectrophoresis. 07  
**OR**
- Q 4C** Explain western blotting with diagrams. 08  
**Q 4D** Explain in detail of working of flow cytometry. 07
- Q 5** Write short note on any three of the following 15
- a Lymphoid progenitors cells
  - b Hematopoiesis
  - c T-Cell coreceptors.
  - d Immunoelectrophoresis.
  - e Chemiluminescence.