Q. P. Code: 23079

2 ½ Hours

Total Marks: 75

1. Attempt **all** questions.
2. **All questions** carry **equal** marks.
3. Draw **neat labelled diagrams** wherever necessary.
4. Use of **log tables** and **non-programmable calculator** is **allowed**.
5. 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. Give an example of a granulocyte.
2. Name the dendritic cell specific to skin.
3. What is the site for T cell maturation?
4. Give the full form of MALT.
5. Fill in the blank: CD 8^+ cells are also called as _____.
6. Give an example of a cell that contains vesicles with histamine.
7. State true or false: C4b2a is also known as C5 convertase.
8. State true or false: Pro- T cells express CD 7 on their cell surface.
9. Fill in the blanks: Peptide binding cleft of MHC class I is made of ___ and ____ domains.
10. State true or false: MHC class II is seen on the surface of all nucleated cells.
11. State true or false: TCR bind antigens in association with MHC.
12. State true or false: T_H cells secrete cytokines to activate B cells.
13. Define: Membrane distal domain of MHC.
14. What are memory T cells?
15. Define: Agglutination reaction.
16. Give an example of a radioisotope used to tag antibodies in RIA.
17. State one application of Coomb's test .
18. State true or false: Identification of a specific protein in a complex mixture of proteins can be accomplished by Western blotting.
19. State true or false: Flow cytometer is used to determine the type and number of white blood cells in blood samples.
20. State one application of indirect ELISA.

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Q 2 A	Discuss the structure and role of lymph node as a lymphoid organ.	**08**
Q 2 B	What is hematopoiesis? Diagrammatically explain the process.	**07**
	OR	
Q 2 C	Describe the alternate pathway for complement activation.	**08**
Q 2 D	What are mononuclear phagocytes? Discuss in brief their structure and function.	**07**
Q 3 A	Describe the structure and functions of TCR complex.	**08**
Q 3 B	Using a neat labelled diagram give the overview of B cell development	**07**
	OR	
Q 3 C	Describe the exogenous pathway for antigen presentation by MHC.	**08**
Q 3 D	Enlist the different types of T cells and describe their functions in brief.	**07**
Q 4 A	Explain the steps involved in ELISPOT assay.	**08**
Q 4 B	Describe two dimensional immunoelectrophoresis.	**07**
	OR	
Q 4 C	What is complement fixation test? Describe the technique.	**08**
Q 4 D	Describe passive agglutination and give its application.	**07**

Q 5 Write short note on **any three** of the following **15**

a Primary lymphoid organ.

b NK cells.

c T cell maturation.

d Technique of direct immunofluorescence.

e Technique of ELISA using chemiluminescence.
