2 ½ Hours

Total Marks: 75

1. Attempt **all** questions.
2. **All questions** carry **equal** marks.
3. Draw **neat labeled 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. Classical complement pathway is initiated by _____.
2. What are CTL?
3. State role of mast cells.
4. State true or false: Dendritic cells function as antigen presenting cells.
5. What is the site for T cell maturation?
6. Give an example of a cell which contains vesicles with histamine.
7. What is the function of spleen?
8. Name any one cell which carry MHC class II molecules.
9. State true or false : B cell receptor binds to antigens.
10. Fill in the blank: Peptide binding cleft of MHC class I is made of _____ and _____ domains.
11. State true or false: Antigen recognition by $CD4^+$ T_H cells is MHC class II restricted.
12. State true or false: Pro- B cells express a transmembrane tyrosine phosphatase called CD45R.
13. State true or false: Immature B cells secrete antibodies.
14. State true or false: More than one Fab site should be available to react with an antigen.
15. Radial immunodiffusion is also known as _____ method.
16. RBCs of which animal are used in complement fixation test?
17. State one difference between direct and indirect coombs test.
18. Name the immunodiagnostic technique involving use of I^{125}
19. Give example of one enzyme used in ELISA.
20. Define titer.

Q.2 A	What is CALT? Describe its role in an immune response.	**08**
Q.2 B	Elaborate on structure & function of mononuclear phagocytes.	**07**
	OR	
Q.2 C	Describe biological consequences of complement activation.	**08**
Q.2 D	With the help of suitable diagram discuss the formation & development of red & white blood cells.	**07**
Q.3 A	Give an account B cell development by Thymus independent antigen.	**08**
Q.3 B	Describe functions of different types of T cells.	**07**
	OR	
Q.3 C	Discuss structure of T cell receptor: CD 3complex with the help of suitable diagram.	**08**
Q.3 D	Elaborate on development & maturation of B cells.	**07**
Q.4 A	Describe ELISPOT assay.	**08**
Q.4 B	Give a brief account on Ouchterlony technique and its application.	**07**
	OR	
Q.4 C	Explain principle and application of Fluorescent antibody technique.	**08**
Q.4 D	With a suitable example discuss application of western blot in immunodiagnostics.	**07**
Q.5	Write Short notes on **any three** of the following	**15**
a.	Lymph node.	
b.	Complement mediated deficiencies.	
c.	MHC and disease susceptibility.	
d.	Hemagglutination.	
e.	Complement fixation test.	