

**B.Sc. BIOTECHNOLOGY
FIFTH SEMESTER
IMMUNOLOGY
BBT-502**
[USE OMR FOR OBJECTIVE PART]

2024/11

**SET
A**

Duration: 1.30 hrs.

Full Marks: 35

(Objective)

Time: 15 min.

Marks: 10

1X10=10

Choose the correct answer from the following:

1. Plasma therapy does not include
 - a. Oral vaccine
 - b. Transfer of preformed antibodies
 - c. Transcytosis of antibodies
 - d. All of the above except (b)
2. Activation of macrophages depend upon
 - a. Interaction with antigen
 - b. Interaction with antigen-MHC class II
 - c. Cytokines secreted by T_H cells
 - d. all of the above
3. What is not found in primary follicles?
 - a. Germinal center
 - b. B cells
 - c. Macrophage
 - d. Mast cells
4. Positive selection in bone marrow is to remove
 - a. B cells acting against grafts
 - b. B cells acting against self-components
 - c. B cells acting against BSA
 - d. B cells against B cells from another individual
5. How many amino acid residues are present in the extra domain of IgA?
 - a. Question is wrong
 - b. Because of extra amino acids
 - c. Because of an extra β sheets
 - d. Both (b) and (c)
6. Receptor for antibody binding on the surface of basophils is specifically for
 - a. IgG
 - b. IgE
 - c. IgA
 - d. IgM
7. Which of the following is true regarding MHC
 - a. Class I is expressed by macrophage
 - b. Haplotypes are not codominantly expressed
 - c. Polymorphism is absent in MHC
 - d. None is correct
8. C5 convertase initiates
 - a. Opsonization
 - b. Viral neutralization
 - c. Smooth muscle contraction
 - d. MAC formation

9. Properdin increases the half-life of
- | | |
|----------|------------|
| a. C5b6 | b. C4b2b |
| c. C3bBb | d. C3bBb3b |
10. ABO blood grouping is an example of
- | | |
|-----------------|---------------------|
| a. Identity | b. Cross reactivity |
| c. Polymorphism | d. Both (b) and (c) |

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(Descriptive)

Time : 1 hrs. 15 min.

Marks : 25

[Answer question no.1 & any two (2) from the rest]

1. What is plasma and how was it significant during Covid 19? Justify your answer. Explain how inflammatory responses play a role in killing invading microbes. 5
2. Explain the structure of antibodies with help of IgE and explain how it protects the fetus from in its early months inside mother's womb. Explain how precipitation reaction is done in gels with the help of immunoelectrophoresis. Mention its importance. Explain cross reactivity with the example. 3+2+3+2=10
3. Explain the structure of MHC I molecules with a neat diagram. What is the importance of expression of class I MHC molecules during an immune response against virus infection? What are Haptens? Is there any use of immune response in detection of pregnancy using home pregnancy test kit? Give your justification. What is agglutination reaction? 3+2+1+2+2=10
4. What is the importance of the alternative pathway of complement activation? Explain the mechanism. Justify your answer. How MAC causes cell lysis? Explain the mechanism. What is the importance of C3b during opsonization? Justify your answer with an example. 3+4+3 =10
5. Explain the mechanism of RIA and Indirect ELISA. How the results of competitive ELISA. 4+4+2=10

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