

477/Zool

UG/4th Sem./ZOOL-H-CC-T-10/24

U.G. 4th Semester Examination - 2024

ZOOLOGY

[HONOURS]

Course Code : ZOOL-H-CC-T-10

(Immunology)

Full Marks : 40

Time : 2½ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any five of the following: 2×5=10
 - a) Define hapten.
 - b) What do you mean by allotype and idiotypic antibodies?
 - c) Explain acquired immunity.
 - d) What is agglutinin?
 - e) What do you mean by Fc fragment of immunoglobulin and state its role.
 - f) State the function of Bursa of Fabricius and mention its location.
 - g) Which kinds of bonds are involved in antigen antibody interaction?
 - h) Explain antibody affinity and avidity.

[Turn Over]

2. Answer any two of the following: $5 \times 2 = 10$

- a) Differentiate between class I and class II MHC molecule. C3b and C4b binding facilitates opsonisation – explain. $3+2$
- b) How do the three pathways of complement activation differ in the substances that can initiate activation? Mention the similarities of these pathways. State the role of properdin in alternative pathway of complement activation. $2+2+1$
- c) State the role of HGRPT in hybridoma technology. Enumerate the important applications of monoclonal antibodies. $2+3$
- d) State the difference between humoral and cell mediated immunity. 5

3. Answer any two of the following: $10 \times 2 = 20$

- a) Differentiate between T cell and B cell receptor. Describe the structure of MHC class I protein with suitable diagram. Explain self MHC restriction. $2+5+3$

b) Write down the principle of radioimmunoassay. State the differences between ELISA and RIA. How can you separate bound antigen from free antigen in RIA? Describe the precipitation reaction with suitable curve. $2+2+3+3$

c) Enumerate the events of inflammatory response with suitable diagram. Discuss the physiologic barriers that contribute to innate immunity. $6+4$

d) Distinguish between disease and syndrome. What do you mean by clonal selection and clonal expansion? How monoclonal antibody production aids in countering viral and protozoan pathogens? $1+4+5$