

U.G. 4th Semester Examination - 2020**ZOOLOGY****[HONOURS]****Course Code : ZOOL(H)-CC-T-10**

Full Marks : 40

Time : $2\frac{1}{2}$ 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** questions of the following:

2×5=10

- a) What do you mean by MALT?
- b) What is adjuvant?
- c) Define isotype.
- d) Explain Prozone effect.
- e) What is paratope? Which immunoglobulin can pass through the placenta?
- f) What do you mean by MHC haplotype?
- g) What is meant by chemokine?
- h) What kinds of interactions are involved in antigen-antibody interaction?

2. Answer any **two** questions of the following:

5×2=10

- a)
 - i) What is atopy ?
 - ii) Differentiate between allotype and idiotypic.
 - iii) What is avidity? 1+3+1=5
- b)
 - i) What is CDR or complementarity determining regions?
 - ii) Mention the component of complement system.
 - iii) What is toxoid? 2+2+1=5
- c)
 - i) State the role of leukotriens and prostaglandin in hypersensitive reaction.
 - ii) What do you mean by self MHC restriction?
 - iii) State the role of TAP Class I MHC mediated pathway. 2+2+1=5
- d)
 - i) Name two secondary lymphoid organs.
 - ii) Describe the structure of immunoglobulin with suitable diagram. 2+3=5

3. Answer any **two** questions of the following:

$$10 \times 2 = 20$$

- a) i) Which polypeptide is important for the expression of MHC1 on the cell membrane?
- ii) How many polypeptide chains make up MHC class I?
- iii) Mention major structural difference between class I and class II MHC molecule. Briefly explain the exogenous pathway of antigen presentation.

$$1 + 2 + (2 + 5) = 10$$

- b) i) State the function of complement.
- ii) Mention the difference between classical and alternative complement activation pathway.
- iii) How does membrane attack complex form in antibody-independent pathway?

$$2\frac{1}{2} + 2\frac{1}{2} + 5 = 10$$

- c) i) What are the advantages and disadvantages of using attenuated organisms as vaccine?
- ii) Explain the phenomenon of herd immunity. Do you think multivalent

subunit vaccines generally induce a greater response than synthetic peptide vaccines?

- iii) Describe the structure of $\alpha\beta$ T-cell receptor with suitable diagram.

$$2 + (2 + 2) + 4 = 10$$

- d) i) Give a note on sandwich ELISA.
- ii) What is HAT medium?
- iii) What is meant by monoclonal antibody?
- iv) Briefly describe the monoclonal antibody production using hybridoma technology.

$$2 + 1 + 2 + 5 = 10$$
