

2017

ZOOLOGY – HONOURS

Fifth Paper

(Unit – I)

Full Marks – 50

*The figures in the margin indicate full marks*

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

1. Answer **five** questions from the following : 2×5
- (a) What is opsonisation?
  - (b) Distinguish between Gram – positive and Gram – negative bacteria.
  - (c) Define adjuvant with example.
  - (d) Define innate immunity.
  - (e) What is hypervariable region of immunoglobulin? State its significance.
  - (f) What are affinity and avidity of antibody?
  - (g) Define Pasteurization. What do you know by HTST pasteurization?
  - (h) What are GALT and CALT?
  - (i) What are cytokines? Give examples.

**Group – A**

Answer **any one** from the following questions

2. (a) Differentiate synthetic or defined and non-synthetic or complex media. State the use of selective and differential media in the identification of microorganisms. 2+5
- (b) In what ways sterilization differs from disinfection? What is phenol coefficient? 2+1
3. (a) Enumerate the mode of transmission and symptoms of cholera. 3+2
- (b) Add a note on cholera toxin and its mode of action. 5

**Group – B**

Answer **two** from the following questions

4. (a) Describe asexual stages of life cycle of *Plasmodium vivax* with suitable illustration. 5
- (b) What do you mean by biological vector? Cite example. 2
- (c) Cite major differences between hard ticks and soft ticks, with examples. 3

[Turn Over]

5. (a) Write a note on malignant malaria. 3  
 (b) Name the Indian vector responsible for Kala-azar. What is L-D body? Describe the life cycle stages of *L. donovani* with proper illustration. 1+1+5
6. (a) Describe the structure of microfilaria of *W. bancrofti* with labelled diagram. 4+2  
 (b) Highlight the possible causes of microfilarial periodicity. 3  
 (c) Name the infective stage of *Fasciola* sp. 1

### Group – C

Answer **any one** from the following questions

7. (a) Describe the structure of T-cell receptor complex. 3  
 (b) Write a note on APCs. 3  
 (c) Discuss precisely the mode of action of humoral and cell mediated immune response. 4
8. (a) What is complement system? Describe the classical pathway of complement activation. 1+3  
 (b) What is monoclonal antibody? How does HAT medium facilitate selection of B-cell hybridoma? 1+3  
 (c) Draw and label the structure of an immunoglobulin molecule. 2