

**63/1 (SEM-5) DSE1/ZOOHE5016**

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( Held in 2023 )

**ZOOLOGY**

Paper : ZOOHE5016

( **Immunology** )

Full Marks : 60  
Pass Marks : 24

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

1. Choose the correct options from the following : 1×5=5

(a) IgG is found

- (i) only in lymph
- (ii) only in plasma
- (iii) both in lymph and plasma
- (iv) None of the above

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- (b) T-lymphocytes are produced
- (i) in bone marrow
  - (ii) in thymus gland
  - (iii) both in bone marrow and thymus gland.
  - (iv) None of the above
- (c) What type of cell produces antibody?
- (i) B-cell
  - (ii) T-cell
  - (iii) Both B- and T-cell
  - (iv) None of the above
- (d) What is the full form of RIA?
- (i) Radius-immuno assay
  - (ii) Ratio-immuno assay
  - (iii) Radio-immuno assay
  - (iv) None of the above
- (e) In hybridoma technology, the mammalian organ usually used in the production of monoclonal antibody is
- (i) liver
  - (ii) spleen
  - (iii) thymus gland
  - (iv) kidney

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2. Answer the following questions briefly :  $2 \times 5 = 10$

- (a) What are the strengths and weaknesses of innate immunity?
- (b) Write the main purposes of type-I interferon.
- (c) What are the major steps by which inflammation can be triggered?
- (d) Why is it that B-cells can secrete soluble forms of their antibody but T-cells cannot?
- (e) What are the two major pathways of complement activation? Write in brief.

3. Write short notes on any *five* of the following questions :  $5 \times 5 = 25$

- (a) Cell-mediated immunity
- (b) Monoclonal antibody
- (c) Basic properties of antigen
- (d) Type-1 hypersensitivity
- (e) Haptens
- (f) Inflammation
- (g) Apoptosis

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4. Answer any *two* of the following questions in detail : 10×2=20

(a) Write different classes of immunoglobulin with their functions. Draw a labelled diagram of immunoglobulin molecule. 10

(b) Write the role of MHC molecules in recognition of antigens and immune response for both the classes. 10

(c) What is autoimmune disease? Why auto-immunity occurs? Describe autoimmune disease with an example. 1+4+5=10

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