

[4]

SECTION 'C'  $4 \times 10 = 40$

Long Answer questions (Word limit 400-450 words.)

**UNIT-I**

1. Define the term immunity. Discuss briefly innate and acquired immunity.

**OR**

Describe structure of secondary and tertiary lymphoid organs.

**UNIT-II**

2. Write an essay on T-cell immune response.

**OR**

Describe Antigen-Antibody interaction.

**UNIT-III**

3. Write a detail note on various types of hypersensitivity reactions.

**OR**

Describe in detail the immune response to intracellular parasitic infection.

**UNIT-IV**

4. Discuss briefly the development of nervous system in any vertebrate.

**OR**

Write an essay on 'Teratology'.

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[1]

ROLL NO.....

**ZOO. 203/22**

**II SEMESTER EXAMINATION, 2022**

**M.Sc. (ZOOLOGY)**

**PAPER-III**

**IMMUNOLOGY & DEVELOPMENTAL BIOLOGY**

**TIME: 3 HOURS**

**MAX.- 80**

**MIN.- 16**

**Note: The question paper consists of three sections A, B & C. All questions are compulsory.**

**Section A- Attempt all multiple choice questions.**

**Section B- Attempt one question from each unit.**

**Section C- Attempt one question from each unit.**

SECTION 'A'  $2 \times 8 = 16$

**MCQ (Multiple Choice Questions)**

1. A heptane is a -  
a) Carbohydrate side chain  
b) Amino acid side chain  
c) Small molecule attached to a protein  
d) Antibiotic
2. Which of the following types of cytokines is responsible for the growth and maturation of B cells?  
a) IL-1                      b) IL-2                      c) IL-7                      d) IL-4

**[2]**

3. The IgE mediated degranulation of mast cells does not involve -
  - a) Complement activation
  - b) A rise in intracellular  $\text{Ca}^{++}$
  - c) Release of vasoactive agents from granules
  - d) The synthesis of leukotrienes
4. Compare to the secondary immune response, the primary immune response-
  - a) Attain a higher IgG titre
  - b) Has a longer lag phase
  - c) Persists for a longer plateau period
  - d) Produce antibody with a higher affinity for antigen
5. Which lymphoid organ is located in the ventral cavity, thoracic cavity and mediastinum?
  - a) Spleen
  - b) Liver
  - c) Tonsils
  - d) Thymus gland
6. If an unfertilized egg is pricked with a micro needle, it will -
  - a) Die immediately
  - b) Transform into a tadpole at a faster rate
  - c) Start dividing
  - d) Will remain undivided
7. Which of the following is a quantitative precipitation technique?
  - a) Counter immuno electrophoresis
  - b) Gel diffusion
  - c) Radial immuno diffusion
  - d) Immuno electrophoresis
8. The type of cleavage is found in insects?
  - a) Superficial
  - b) Discoidal
  - c) Holoblastic
  - d) None of the above

**[3]**

**SECTION 'B'**

**4 × 6 = 24**

**Short Answer Type Questions (Word limit 200-250 words.)**

**UNIT-I**

1. Describe the structure and function of granular leucocytes with diagram.

**OR**

Draw the well labelled diagram of Thymus showing internal structure.

**UNIT-II**

2. Write a note on T cell receptors.

**OR**

Draw a well labelled diagram of Pentameric IgM showing structural details.

**UNIT-III**

3. Write a note on regulation of complement system.

**OR**

Draw well labelled diagram of MHC-I molecule showing structural details.

**UNIT-IV**

4. Write a note on Twinning Gastrulation.

**OR**

Write a detail note on Blastulation and its Significance.