

[4]

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

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

**UNIT-I**

1. Describe the cells and organs of the immune system.

**OR**

Describe the human lymphoid system and lymphocyte traffic.

**UNIT-II**

2. Describe the structure and functions of immunoglobulin.

**OR**

Describe the humoral immune response and its kinetics.

**UNIT-III**

3. Describe the classical and alternative pathway of the complement system.

**OR**

Describe the structure of Class-I and Class-II MHC molecules and cite major differences.

**UNIT-IV**

4. Describe the events in tissue formation in the early mammalian embryo.

**OR**

Describe the amnion structure and cell movements during human gastrulation.

-----xxx-----

[1]

ROLL NO.....

**ZOO. 203/21**

**II SEMESTER EXAMINATION, 2021**

**M.Sc. (ZOOLOGY)**

**PAPER-III**

**IMMUNOLOGY & DEVELOPMENT 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)**

- Which of the following cell is multipotent?
  - T-cell
  - B-cell
  - HSC
  - Monocytes
- Which of the following cell is not a Lymphoid Progenitor?
  - Monocyte
  - B-cell
  - T-cell
  - NK cells

[2]

3. Which of the following cell is not a Polymorphonuclear Leukocyte?
  - a) Eosinophils
  - b) Mast cell
  - c) Macrophages
  - d) Basophils
  
4. Which of the following macrophages are associated with the central nervous system?
  - a) Alveolar macrophages
  - b) Kupffer cell
  - c) Mesangial
  - d) Microglial cells
  
5. Which of the following immunoglobulins is also called secretory immunoglobulin?
  - a) IgG
  - b) IgA
  - c) IgM
  - d) IgE
  
6. The Lectin Pathway of the Complement System originates with-
  - a) Host proteins binding microbial surfaces
  - b) Host lipids binding microbial surfaces
  - c) Host carbohydrates binding microbial surfaces
  - d) Host enzymes binding microbial surfaces
  
7. Koller's Sickle gives rise to which of the following?
  - a) Primitive Streak
  - b) Somites
  - c) Neural Tube
  - d) Blastocoel

[3]

8. Rotational cleavage is found in which organisms?
  - a) Amphibians
  - b) Reptiles
  - c) Aves
  - d) Mammals

**SECTION 'B'**

**4 × 6 = 24**

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

**UNIT-I**

1. Describe the term Antigenicity & Immunogenicity.  
**OR**  
Describe Antigenic determinants or Epitopes.

**UNIT-II**

2. Explain the process of B-cell activation and proliferation.  
**OR**  
Explain the process of T-cell activation and proliferation

**UNIT-III**

3. Explain the process of peptide interaction with MHC molecule.  
**OR**  
Describe hypersensitivity to infectious agents.

**UNIT-IV**

4. Describe the fertilization, cortical rotation and cleavage in amphibians.  
**OR**  
Describe the cell movements during amphibian gastrulation.