

Roll No.

E-537

**M. Sc. (Second Semester) (Main)
EXAMINATION, May-June, 2021**

ZOOLOGY

Paper Third

(Immunology and Developmental Biology)

Time : Three Hours] [Maximum Marks : 80

Note : Attempt all Sections as directed.

Section—A 1 each

(Objective/Multiple Choice Questions)

Note : Attempt all questions.

Choose the correct answer :

- Which of the following immunity is present from our birth ?
 - Innate immunity
 - Active immunity
 - Passive immunity
 - Acquired immunity

- B-cells and T-cells are two types of cells involved in :
 - innate immunity
 - Active immunity
 - Passive immunity
 - Acquired immunity
- Which of the following cells is involved in cell-mediated immunity ?
 - T-cells
 - B-cells
 - Mast cells
 - Both T and B-cells
- Complement system is involved in :
 - Specific defence
 - Non-specific defence
 - Both (a) and (b)
 - None of the above
- Which of the following is the central molecule in complement pathway ?
 - C₁
 - C₂
 - C_{3b}
 - C₅

P. T. O.

6. Biological role of complement system include :
- (a) Cytolysis and chemotaxis
 - (b) Opsonisation
 - (c) Anaphylotoxin and enhanced antibody production
 - (d) All of the above
7. What is the example of autoimmune disorder are linked to specific HLA alleles ?
- (a) Diabetes mellitus
 - (b) Psoriasis
 - (c) Multiple sclerosis
 - (d) All of the above
8. The second most abundant Ig is :
- (a) IgG
 - (b) IgM
 - (c) Ig
 - (d) None of the above
9. Which of the following immunoglobulins makes the largest percentage in breast milk ?
- (a) IgG
 - (b) IgM
 - (c) IgD
 - (d) IgA

10. Transplanted graft may be rejected due to :
- (a) Cell-mediated immune response
 - (b) Humoral immune response
 - (c) Innate immune response
 - (d) Passive response
11. Oral polio drops contain :
- (a) Harvested antibodies
 - (b) Activated pathogens
 - (c) Attenuated pathogens
 - (d) Gamma globulins
12. Antibodies are :
- (a) Prostaglandins
 - (b) Steroids
 - (c) Lipoproteins
 - (d) Glycoproteins
13. Interferons are :
- (a) Antibiotic proteins
 - (b) Antiviral proteins
 - (c) Antigen proteins
 - (d) All of the above
14. Antigen binding sites are present in :
- (a) F_{ab} regions of an antibody
 - (b) F_c region of an antibody
 - (c) Only in the light chain
 - (d) Only in the heavy chain

[5]

E-537

15. This is also known as meroblastic cleavage :
- (a) Partial
 - (b) Unequal holoblastic
 - (c) Equal holoblastic
 - (d) Superficial
16. Discoidal and superficial cleavages are types of :
- (a) Unequal holoblastic
 - (b) Equal holoblastic
 - (c) Both (a) and (b)
 - (d) Meroblastic
17. How many cleavages are completed in the 16-celled stage of an egg ?
- (a) 12
 - (b) 8
 - (c) 4
 - (d) 3
18. Which of the following organ is formed during gastrulation ?
- (a) Gill
 - (b) Vitelline membrane
 - (c) Heart
 - (d) Archenteron

P. T. O.

[6]

E-537

19. Brain, nerve cells and spinal cord or the central nervous system develops from embryonic :
- (a) Mesoderm
 - (b) Endoderm
 - (c) Ectoderm
 - (d) Both (b) and (c)
20. Which of the following options contains only the mesodermal structures ?
- (a) Heart, blood, bones, notochord
 - (b) Heart, blood, muscles, liver
 - (c) Notochord, blood, liver, muscles
 - (d) Liver, heart, bones, blood

Section—B

2 each

(Very Short Answer Type Questions)

Note : Attempt all questions.

1. Killer T lymphocytes.
2. IgM found in which part of the body ?
3. What is epitope ?
4. Structure of MHC molecule.
5. Morula stage.
6. Future of archenteron.
7. What is acrosome ?
8. Define blastopore.

[7]

E-537

Section—C

3 each

(Short Answer Type Questions)

Note : Attempt all questions.

1. Give only structure of IgG.
2. Give the example of primary and secondary lymphoid organs.
3. What is suppressor T-cell ?
4. Write a note about B-cell receptors.
5. What is Minor Histocompatibility Complex ?
6. Importance of blastula.
7. What is epiboly and emboly ?
8. Define morphogenesis with suitable examples.

Section—D

5 each

(Long Answer Type Questions)

Note : Attempt all questions.

1. Relation between immune system cell and lymphatic system.

Or

Explain the nature of antigen.

2. Describe antigen-antibody interaction.

Or

Describe Humoral immune response.

[8]

E-537

3. Explain phenomenon of peptide interaction with MHC.

Or

Write the definition, function and components of MHC.

4. Morphogenic activity of cardiovascular system during embryonic development.

Or

Explain phenomenon of Twinning.

E-537

P. T. O.