

Roll No.

Total Printed Pages -8

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**M.Sc. (Fourth Semester)
EXAMINATION, May - June, 2022
ZOOLOGY
(Optional Paper Group - 1)
Paper Fifth
(Biology of Vertebrates Immune System)**

Time : Three Hours]

[Maximum Marks:80

Note: Attempt all sections as directed.

**(Section - A)
(Objective/Multiple Choice Questions)**

(1 mark each)

1. Hassal's corpuscles are found in:
- (A) Thyroid Gland
 - (B) Bone Marrow
 - (C) Thymus
 - (D) Spleen

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2. Bursa of Fabricus in chicks is found in:
- (A) Near Cloaca
 - (B) Above Kidney
 - (C) Around Spleen
 - (D) Near Liver
3. In Birds, Thymus Gland is a:
- (A) 5 - lobed structure
 - (B) 10 - lobed structure
 - (C) 3 - lobed structure
 - (D) 7- lobed structure
4. Gall bodies are associated with:
- (A) T - cells
 - (B) B - Cells
 - (C) Golgi bodies
 - (D) Barr bodies
5. MHC class I molecules are primarily involved in:
- (A) Recognition of glycolipid antigens
 - (B) Resistance to fungi
 - (C) Resistance to viruses
 - (D) Activation of neutrophils

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6. The Microfold cells are found in:
- (A) Thyroid Gland
 - (B) Thymus Gland
 - (C) Bursa of Fabricus
 - (D) Peyer's Patches
7. B- cells are activated by which of the following-
- (A) Hydrolysis of complement proteins
 - (B) Cross-linking of surface antibody
 - (C) Polymerization of surface receptors
 - (D) Hyper activation of calcium channels
8. T - Cell mediated immunity is initiated by:
- (A) CD 8 Cell
 - (B) CD 4 Cell
 - (C) CD 28 Cell
 - (D) CD 40 Cell
9. Which of the following is the major site of antibody production in the plasmocyte -
- (A) Ribosome
 - (B) Mitochondria
 - (C) Lysosome
 - (D) Rough Endoplasmic Reticulum

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10. Which of the following are referred as "Work horse antibody"?
- (A) Ig E
 - (B) Ig G
 - (C) Ig M
 - (D) Ig A
11. Recombinant vaccine is used for which of the following:
- (A) Small pox virus
 - (B) Polio Virus
 - (C) HIV
 - (D) Vaccinia virus
12. Which of the following is a potential molecule for Malaria vaccine?
- (A) ADA
 - (B) CSP
 - (C) gD50
 - (D) ACTH
13. Which of the following IgG does not readily cross the placental barriers?
- (A) Ig G1
 - (B) Ig G2
 - (C) Ig G3
 - (D) Ig G4

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14. Which of the following chain allows polymerization of IgA and IgM?
- (A) H chain
 - (B) L chain
 - (C) J chain
 - (D) V chain
15. Arthus reaction is associate with which type of Hypersensitivity?
- (A) Type I Hypersensitivity
 - (B) Type II Hypersensitivity
 - (C) Type III Hypersensitivity
 - (D) Type IV Hypersensitivity
16. T helper cell mediated hypersensitivity is:
- (A) Type I Hypersensitivity
 - (B) Type II Hypersensitivity
 - (C) Type III Hypersensitivity
 - (D) Type IV Hypersensitivity
17. Chimeric antibodies are:
- (A) 5% murine and 95% human
 - (B) 10% murine and 90% human
 - (C) 15% murine and 85% human
 - (D) 50% murine and 50% human

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18. The direct ELISA test requires:
- (A) Known antibody
 - (B) Known antigen
 - (C) Complement
 - (D) Patient antibody
19. Which of the following would be a suitable use of a direct fluorescent antibody test:
- (A) Detecting rabies virus in an animal's brain
 - (B) Measuring the amount of antibody in serum
 - (C) Identifying different strains of viruses
 - (D) Lysis of bacterial cellwall
20. Bence - Jones protein refers to which of the following:
- (A) Light chains polypeptides
 - (B) Heavy chains polypeptides
 - (C) C3 converters polypeptides
 - (D) Polmerase polypeptides

Section - B

(Very Short Answer Type Questions)

(2 marks each)

Note: Attempt all questions. Write answer in two - three sentences.

1. What are secondary lymphoid organs?

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2. How is the bone marrow significant for our immunity?
3. Define antibody.
4. What is histocompatibility?
5. Name the different types of vaccines.
6. Define extravasations.
7. What is Hat medium?
8. Define avidity.

Section - C

(Short Answer Type Questions)

(3 marks each)

Note: Attempt at questions.

1. What are Antigen Presenting cells?
2. Elaborate the structure of a lymph node.
3. Explain "Somatic Hypermutation".
4. Describe interaction of T - cell with antigen.
5. Describe the role of adjuvants in vaccination.
6. Explain anaphylaxis.
7. What is contact hypersensitivity?
8. Explain the composition of selection medium in hybridoma technology.

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Section - D

(Long Answer Type Questions)

(5 marks each)

Note: Attempt all questions.

1. Give an account of lymphoid progenitor cells.

OR

Describe the role of MHC Molecules in recognition of antigens.

2. Explain the process of antibody production.

OR

Describe the mechanism of T - cell activation.

3. Explain gene organization of light and heavy chain polypeptides.

OR

Elaborate the role of immune complexes.

4. Describe the different types of ELISA.

OR

Explain the process of Monoclonal Antibody production.

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