

Roll No.

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M. Sc. (Third Semester)
EXAMINATION, Dec. - Jan., 2021-22
BIOTECHNOLOGY
Paper Tenth
(Biology of Immune System)

*Time : Three Hours]**[Maximum Marks : 80]**[Minimum Pass Marks : 16]***Note : Attempt all sections as directed.****Section - A****(Objective / Multiple choice Questions)****(1 mark each)****Note :** Attempt all questions.

Choose the correct / most appropriate answer and write it in your answer book.

1. The process of weaking a pathogen in called.
 - (A) Virulence reduction
 - (B) Immunization
 - (C) Allenuation
 - (D) Vaccination

2. Cyclosporine binds to which intracellular messenger ?
 - (A) Cal cineusin
 - (B) Tyrosine kinase
 - (C) Interleukin
 - (D) Phospholipase
3. B₂ microglobulin present on MHC :
 - (A) Class I MHC
 - (B) Class II MHC
 - (C) Class III MHC
 - (D) None of these
4. Which of the following amino acids is found in the hinge region?
 - (A) Phanylalanine
 - (B) Aspartin
 - (C) Cobalamine
 - (D) Proline and Cysteine
5. Antigen such as proteins have several different sites that can react with antibodies. These sites are called .
 - (A) Isotopes
 - (B) Epitopes
 - (C) Paratopes
 - (D) Prototopes

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6. Which of the following is a quantitative precipitation technique ?
- (A) Counter current immuno-electrophoresis
 - (B) Gel diffusion
 - (C) Radial immuno diffusion
 - (D) Immuno electrophoresis
7. Terms macrophages and microphages are coined by -
- (A) Bordet
 - (B) Murray
 - (C) Medawar
 - (D) Metschni koff
8. Myasthenia gravis due to -
- (A) Auto antigen
 - (B) Interferon
 - (C) Toxins
 - (D) Cytokins
9. Which of the following bind to mast cells and cross link resulting in degranulation and release of histamine ?
- (A) IgA
 - (B) IgE
 - (C) IgM
 - (D) IgG

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10. Self tolerance is -
- (A) The ability to withstand a fever
 - (B) The ability to turn immunity on or off
 - (C) The immune system ability to recognize tissues as being self
 - (D) Ability to tolerate illness
11. First successful vaccine was developed for which of the following disease ?
- (A) Small pox
 - (B) Malaria
 - (C) Mumps
 - (D) Measles
12. In chick, Bursa of fabricius is found in -
- (A) Near cloaca
 - (B) Around spleen
 - (C) Near liver lobes
 - (D) Above the kidney
13. Contact with poison IVY would elicit which type of hypersensitivity reaction?
- (A) Type I
 - (B) Type II
 - (C) Type III
 - (D) Type IV

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14. Which of the following scientist is called as 'Father of Immunology'
- (A) Donald Thomas
 - (B) Susumu Tonegawa
 - (C) Louis Pasteur
 - (D) Rosaly Franklin
15. Name the most commonly used monoclonal antibody for the treatment of breast cancer -
- (A) Bradikinins (B) Prostaglandins
 - (C) Herceptin (D) Erbutir
16. All of the following are true with respect to IgM antibody except which are -
- (A) They fix complement
 - (B) They mediate allergic reaction
 - (C) They are glycoprotein
 - (D) They occur on the surface of the lymphocytes
17. Which of the following interleukin stimulate differentiation of Thz subset and production of IgE ?
- (A) IL - 4
 - (B) IL - 2
 - (C) IL - 1
 - (D) None of these

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18. The characteristics properties of cytokines are -
- (A) Pleiotropy and redundancy
 - (B) Synergy and antagonism
 - (C) Cascade induction and amplification
 - (D) All of the above
19. A child has no detectable T or B cells. This immunodeficiency is most probably the result of a defect in.
- (A) T all B cell interaction
 - (B) The thymus
 - (C) The bursal equivalent
 - (D) Stem cell originating in the bone marrow
20. Complement system is involved in -
- (A) Specific defuse
 - (B) Non specific defuse
 - (C) both (A) and (B)
 - (D) None of these

SECTION - B

(Very Short Answer Types Question)

(2 marks each)

Note : Attempt all Questions. Answer using 2-3 Sentences only.

1. What is haptane ?
2. Define germinal centre.

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3. What is redundancy ?
4. Draw a well labelled diagram of Neutrophill.
5. What is adjuvants ?
6. What is membranous antibody ?
7. What do you mean by acquired immunity.
8. What is vaccines.

SECTION - C

(Short Answer Types Questions)

Note : Attempt all questions. Answer precisely using 75 words.

(3 marks each)

1. Draw a well labelled diagram of thymus showing internal structure.
2. Write a note on superantigen.
3. Write a brief note on BCR.
4. Discuss briefly the type I hypersensitivity.
5. Describe classical pathway of complement activation.
6. Explain immunological tolerance in brief.
7. Describe DNA Vaccines.
8. Write a note on Lymphocyte trafficking.

Section - D

(Long Answers Type Questions)

(5 marks each)

Note : Attempt all questions. Answer precisely using 150 words.

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1. Describe characteristics and function of various types of immunoglobulins.

Or

Write a detail note on Antigen-Antibody interaction.

2. Give a detail account of major histocompatibility complex.

Or

Describe structure and function of cells of immune system.

3. Write an essay on Autoimmunity.

Or

Write a comprehensive note on cytokines and their role in immune regulation.

4. Give a detail account on AIDS.

Or

Write the characteristics production and application of Monoclonal antibody.