

B.Sc. MICROBIOLOGY
FIFTH SEMESTER (SPECIAL REPEAT)
IMMUNOLOGY
BMB-502

(Use separate answer scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

[PART-A : Objective]

Time : 20 min.

Marks : 20

1X20=20

Choose the correct answer from the following:

1. The branch of biology, which involves the study of immune systems in all organisms, is called.....
 - a. Zoology
 - b. Microbiology
 - c. Immunology
 - d. Biotechnology
2. IgM is a:
 - a. Monomer with 2 antigen binding site
 - b. Tetramer with 8 antigen binding site
 - c. Dimer with 4 antigen binding site
 - d. Pentamer with 10 antigen binding site
3. Globulins of the blood plasma are responsible for:
 - a. Antigen
 - b. Oxygen transport
 - c. Defence mechanisms
 - d. Blood clotting
4. Interferons are:
 - a. Antiviral proteins
 - b. Antigen proteins
 - c. Antibiotic proteins
 - d. All of the above
5. Antibodies are:
 - a. Steroids
 - b. Prostaglandins
 - c. Lipoproteins
 - d. Glycoproteins
6. Name the cytokines which released in response to virus infection.
 - a. Lymphokines
 - b. Interleukins
 - c. Monokines
 - d. None of the above
7. Antigen binding sites are present in:
 - a. Fc regions of an antibody
 - b. Only in the heavy chain
 - c. Only in the light chain
 - d. None of the above
8. Which of the following immunity is obtained during a lifetime?
 - a. Passive immunity
 - b. Acquired immunity
 - c. Innate immunity
 - d. Active immunity
9. The class of antibodies, which can cross placenta is:
 - a. IgM & IgE
 - b. IgA
 - c. IgG
 - d. IgE
10. B Cells that produce and release large amounts of antibody are called:
 - a. Killer cells
 - b. Neutrophils
 - c. Basophil
 - d. Plasma cells

11. Which type of hypersensitivity reaction causes rapid anaphylaxis in response to an allergen?
 - a. Type I
 - b. Type IV
 - c. Type II
 - d. Type III
12. Type I hypersensitivity involves:
 - a. IgG
 - b. IgE
 - c. IgA
 - d. IgM
13. Which category of hypersensitivity BEST describes hemolytic disease of the newborn caused by Rh incompatibility?
 - a. Immune complex
 - b. Cytotoxic
 - c. Atopic or anaphylactic
 - d. A and B
14. If you have an autoimmune disease, what happens with the immune system?
 - a. Antibodies from your immune system mistakenly attack tissues in the body
 - b. Your immune cells die
 - c. Your immune system makes too many immune cells
 - d. A and B
15. Complement component C3 is cleaved by:
 - a. Factor B
 - b. C3b
 - c. C3bBb
 - d. Factor D
16. ELISA (enzyme-linked immunosorbent assay) allows for rapid screening and quantification of the presence of _____ in a sample.
 - a. Protein
 - b. DNA
 - c. Antibody
 - d. Amino Acid
17. A tissue graft between two people who are not genetically identical is termed:
 - a. Allograft
 - b. Endograft
 - c. Xenograft
 - d. Isograft
18. The transfer of individuals own tissue to another part of the body is called:
 - a. Xenograft
 - b. Repair and replacement
 - c. Autograft
 - d. A and B
19. Which sentence is not true about RIA?
 - a. Centrifugation rpm is 1200-2500
 - b. This technique is very sensitivity it can detected 0.01 µg/ml
 - c. This technique is very sensitivity it can detected 0.001 µg/ml
 - d. The most commonly used radiolabels in RIA are tritium and iodine
20. Rheumatoid arthritis is an..... disease that affects the.....
 - a. Immunodeficiency/muscles
 - b. Allergic/cartilage
 - c. Autoimmune/nerves
 - d. Autoimmune/joints

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(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

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| 1. a. Define antigens. Briefly describe about antigenicity, haptens and adjuvants. | 2+3+5=10 |
| b. Briefly describe the genetic diversity of antibody class. | |
| 2. What is Radio Immunoassay? Write the basic principle, method and application of Radio Immunoassay. | 2+2+3+3=10 |
| 3. Write short notes on the following: | |
| a. Allograft and xenograft | 5+5=10 |
| b. Transplant graft rejection | |
| 4. a. What is hypersensitivity? What are the types of hypersensitivity? | 2+3+5=10 |
| b. Explain details about type IV hypersensitivity with example. | |
| 5. Define ELISA. Briefly describe the principle, method and application of indirect ELISA. | 10 |
| 6. a. What is complement system? Briefly describe the classical pathway of complement system. | 1+4+5=10 |
| b. What is autoimmune disorder? Describe the causes and treatment of autoimmune diseases. | |
| 7. a. Describe the forces that encourage primary antigen-antibody interactions. | 5+5=10 |
| b. Distinguish between agglutination and precipitation reaction. | |
| 8. Write short notes on the following: | |
| a. Innate Immunity | 5+5=10 |
| b. Acquired Immunity | |

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