

Write the following information in the first page of Answer Script before starting answer

ODD SEMESTER EXAMINATION: 2020-21

Exam ID Number _____

Course _____ Semester _____

Paper Code _____ Paper Title _____

Type of Exam: _____ (Regular/Back/Improvement)

Important Instruction for students:

1. Student should write objective and descriptive answer on plain white paper.
2. Give page number in each page starting from 1st page.
3. After completion of examination, Scan all pages, convert into a single PDF, rename the file with Class Roll No. (2019MBA15) and upload to the Google classroom as attachment.
4. Exam timing from 10am – 1pm (for morning shift).
5. Question Paper will be uploaded before 10 mins from the schedule time.
6. Additional 20 mins time will be given for scanning and uploading the single PDF file.
7. Student will be marked as ABSENT if failed to upload the PDF answer script due to any reason.

**B.Sc. MICROBIOLOGY
FIFTH SEMESTER
IMMUNOLOGY
BMB - 502**

Duration: 3 hrs.

Full Marks: 70

Time: 20 min.

(PART-A: Objective)

Marks: 20

Choose the correct answer from the following:

1×20=20

1. Interferons are
 - a. antiviral proteins
 - b. antigen proteins
 - c. antibiotic proteins
 - d. all of the above
2. Name the cytokines which released in response to virus infection?
 - a. Lymphokines
 - b. Interleukins
 - c. Monokines
 - d. None of the above
3. Which of the following immunity is obtained during a lifetime?
 - a. Passive immunity
 - b. Acquired immunity
 - c. Innate immunity
 - d. Active immunity
4. The branch of biology, which involves the study of immune systems in all organisms is called.....
 - a. Zoology
 - b. Microbiology
 - c. Immunology
 - d. Biotechnology
5. 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
6. B Cells that produce and release large amounts of antibody are called:
 - a. Killer cells
 - b. Neutrophils
 - c. Basophil
 - d. Plasma cells
7. Globulins of the blood plasma are responsible for
 - a. Antigen
 - b. oxygen transport
 - c. defence mechanisms
 - d. blood clotting
8. Antibodies are.....
 - a. Steroids
 - b. Prostaglandins
 - c. Lipoproteins
 - d. Glycoproteins
9. 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
10. The class of antibodies, which can cross placenta is
 - a. IgM & IgE
 - b. IgA
 - c. IgG
 - d. IgE

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 andisease 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]

1. Define ELISA? Briefly describe the principle, method and application of indirect ELISA. 10

2. Write short notes on the following: 5+5=10
 - a. Innate Immunity
 - b. Acquired Immunity

3.
 - a. Define antigens? Briefly describe about antigenicity, haptens and adjuvants? 2+3+5
=10
 - b. Briefly describe the genetic diversity of antibody class.

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. What is Radio Immunoassay? Write the basic principle, method and application of Radio Immunoassay. 2+2+3+
3=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: 5+5=10
 - a. Allograft and xenograft
 - b. Transplant graft rejection

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