

**M.Sc. ZOOLOGY
THIRD SEMESTER
IMMUNOLOGY AND HAEMATOLOGY
MSZ-301
[USE OMR SHEET FOR OBJECTIVE PART]**

**SET
A**

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

Marks: 20

(Objective)

Choose the correct answer from the following:

1 × 20 = 20

- Select the correct relative concentration of plasma proteins.
 - Albumin > Fibrinogen > Globulin
 - Albumin > Globulin > Fibrinogen
 - Globulin > Albumin > Fibrinogen
 - Fibrinogen > Globulin > Globulin
- Find out the correct extrinsic cause of Hemolysis.
 - Infection by Mycoplasma pneumoniae
 - Hypersplenism
 - Acquired hemolytic anemia
 - All of these
- In which form erythropoietin regulate hemopoiesis?
 - IL-7
 - G-CSF
 - GM-CSF
 - None
- Level of which blood parameters are found similar in neonates and adult?
 - Platelet count
 - Hemoglobin concentration
 - Site of hemopoiesis
 - Fibrinogen and Von Willibrand factor
- Petechiae is a bleeding disorder caused by:
 - Vascular wall abnormalities
 - Platelet abnormalities
 - Coagulation abnormalities
 - None of these
- The antigenic determinants on the basis of which immunoglobulin are grouped into different classes are located in:
 - Light chain
 - Heavy chain
 - J chain
 - All of the above
- The antibody which is most efficient in agglutination reaction is:
 - IgG
 - IgM
 - IgA
 - IgE
- Excess of antibody inhibits agglutination which is a phenomenon called:
 - Prozone effect
 - Acoustic effect
 - Post zone effect
 - None of the above
- The maximum rate of precipitation occurs in the:
 - Zone of antigen excess
 - The zone of equivalence
 - The zone of antibody excess
 - None of the above
- In agglutination reactions antibodies react with:
 - Soluble antigens
 - Positively charged antigens
 - Particulate antigens
 - All of the above

11. Activated form of Monocyte is called:
a. Neutrophil
b. Eosinophil
c. Basophil
d. Macrophage
12. Innate immunity develops in individuals:
a. During lifetime
b. After vaccination
c. After birth
d. After formation of memory cells
13. MHC Class I molecule can recognize only:
a. T helper cells
b. T cytotoxic cells
c. T memory cells
d. T suppressor cells
14. Which one of the following organs filters antigens from interstitial tissue fluid & lymph?
a. Spleen
b. Thymus
c. Lymph node
d. Bone marrow
15. India's first genetically engineered vaccine is:
a. Hepatitis- A
b. Hepatitis- B
c. Diphtheria
d. Tetanus
16. The site of synthesis of globin that combines with heme molecules:
a. Mitochondria
b. Ribosomes
c. Golgi bodies
d. Bone marrow
17. The insoluble form in which small quantities of iron are stored is called:
a. Hemosiderin
b. Apotrasferin
c. Apoferritin
d. Cytochrome
18. When red blood cells grow very large they are called:
a. Reticulocyte
b. CFV-E
c. Erythroblasts
d. Megaloblasts
19. Which of these factors made a blood cell clot after it is formed?
a. Local antocoid factors
b. Thromboxane A₂
c. ADP
d. Fibroblasts
20. Which one of the following sounds is the Phase 1 of Korotkoff sounds?
a. Sunshing sound
b. Muffled sound
c. A sharp tapping
d. Silence

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(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

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

1. Discuss briefly about T cell receptor with special emphasis on TCR complex and the molecules involved therein. 10
2. What is blood indices? Calculate the value of MCV, MCH, MHCH and CI of a blood sample considering total count of RBC as 4 million, hemoglobin content as 8gm/100 ml and PCV as 30%. Comment upon possible disease suffered by the person of the blood sample. 2+2+6=10
3. Write how tissue macrophages are formed. Mention the characteristics of macrophages. Give details about types of reticulo endothelial cells and their functions.. 1+8+1=10
4. Elucidate in detail with neat and labelled sketches the structure and function of an antibody. 10
5. Mention the types of 'Antigen Presenting Cells'. Write their mechanism of action. 2+8=10
6. Define antigen. Describe the factors affecting antigenicity of an antigen. 2+8=10
7. Why blood typing/blood matching is necessary before blood transfusion? Explain the collection of blood for transfusion, its storage and changes that occur during storage. 2+3+2+3=10
8. What do you know about blood coagulation? Explain the mechanism of blood coagulation. 2+8=10

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