Time: 3 Hours **Marks: 80**

Q. 1. A. Answer the following **16 M**

1. Give an example of a positive feedback mechanism.
2. Give functions and location of non-stratified squamous epithelium.
3. What is antiporter?
4. Define megaloblastic anemia.
5. Justify - Bone marrow as a primary lymphatic organ.
6. Justify – Blood Group AB as a universal acceptor.
7. Define Exudate and write its components.
8. Classify muscles.

Q 1 B Answer the following **4 M**

1. Presence of _____ is a structural feature of cardiac muscle and is not present in skeletal muscle.
2. Define homeostasis.
3. _____ is the normal range of WBCs in blood.
4. Vitamin _____ is essential for blood clotting**.**

Q 2. A. Attempt any TWO of the following questions **8 M**

1. Write a note on the composition of blood and its functions.
2. Explain the mechanism of agglutination if blood of group A is mixed with the blood of group B.
3. Write a note on RBCs.

Q 2. B. Attempt any ONE of the following questions **4 M**

1. Write a note on Sickle Cell anemia.
2. Write a note on Leukemia.

Q 3. A. Attempt any TWO of the following questions **8 M**

1. Compare and contrast between smooth muscles and Skeletal Muscles
2. Explain in brief energy utilization in Skeletal Muscles
3. Explain the sliding filament theory of muscle contraction

Q 3. B. Attempt any ONE of the following questions **4 M**

1. Draw a neat, labeled diagram of sarcomere and explain its structure.
2. Write a note on isotonic and isometric contractions.

Q 4. A. Attempt any ONE of the following questions **4M**

1. Draw a neat, labeled diagram of spleen. Discuss functions of the spleen.
2. Write a short note on Thymus.

Q 4. B. Attempt any ONE of the following questions **4 M**

1. Type IV Hypersensitivity reactions
2. Myasthenia Gravis

Q 4 C. Answer any ONE of the following **4M**

1. Draw a neat labeled diagram of cuboidal epithelium, discuss its location
2. Write a short note on Extracellular Matrix of Connective tissue.

Q 5. A. Attempt any ONE of the following questions **4 M**

1. Explain active transport mechanism.
2. Discuss fluid mosaic model of plasma membrane.

Q 5. B. Attempt any ONE of the following questions **4 M**

1. Write a note on functions and properties of muscles.
2. Write a note on Neuromuscular Junction

Q 5. C. Attempt any ONE of the following questions **4 M**

1. Write a note on Acute Inflammation.
2. Write a note on chemical mediators of inflammation.

Q 6. A. Attempt any TWO of the following questions **8 M**

1. Enlist various types of immune reactions giving suitable examples of each types
2. Explain the process of leukopoiesis in detail.
3. Write a note on first line defense system of human body

Q 6. B. Attempt any ONE of the following questions **4 M**

1. Write a note on vascular changes during inflammation
2. Write a note on outcomes of chronic inflammation

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