

**Q.P. Code: 25605****(3 HOURS)****[ Total Marks: 80]**

- N.B.: 1) **All** questions are compulsory  
 2) **Figures** to the **right** indicate **full** marks  
 3) Draw neat, labelled diagrams wherever necessary.

**Q 1 a) Answer the following****16**

- i) Define negative feedback mechanism of homeostasis
- ii) What is pinocytosis
- iii) Give location and function of Hyaline cartilage
- iv) Enlist components of lymphatic system
- v) Name the antigen and antibody present in following blood group: a) A (b) O
- vi) Enlist cardinal signs of Inflammation
- vii) Explain how Graves' disease leads to hyperthyroidism
- viii) Write classification of muscles

**b) Answer the following****04**

- i) Give example of basic life processes
- ii) Deficiency of which nutrients cause megaloblastic anemia.
- iii) Name the factor involved in the pathogenesis of erythroblastosis fetalis?
- iv) What is isotonic contraction?

**Q.2. a) Answer Any TWO of the following****08**

- i) Define Hemostasis. Explain the process of Platelet Plug Formation.
- ii) Classify White Blood Cells (WBCs). Name the respective conditions in which Neutrophil and Eosinophil count increases
- iii) Describe the process of hemoglobin synthesis

**b) Write a short note on Any ONE of the following****04**

- i) Define Anemia and discuss different types of anemia
- ii) Thrombocytopenia and leucopenia.

**Q.3. a) Answer Any TWO of the following****08**

- i) Explain various sources of energy for muscle metabolism.
- ii) Describe in detail the mechanism of skeletal muscle contraction.
- iii) Describe microscopic anatomy of skeletal muscle.

**b) Answer Any ONE of the following****04**

- i) Explain Excitation - contraction coupling in skeletal muscle.
- ii) Draw a neat, labelled diagram showing organization of skeletal muscle

**Q 4. a) Answer any ONE of the following****04**

- i) Draw a neat labelled diagram of lymph node. Discuss functions of lymphatic system
- ii) Discuss anatomy and functions of spleen

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**b) Write a note on (any ONE)**

**04**

- i) Myasthenia Gravis
- ii) Rheumatic fever

**c) Answer any ONE of the following**

**04**

- i) Classify connective tissue and give example and location of each type
- ii) Write a short note on Stratified Epithelium.

**Q 5 a) Answer any ONE of the following**

**04**

- i) Compare and contrast between the active and passive transport processes.
- ii) Explain the mechanism of pinocytosis in detail.

**b) Answer any ONE of the following**

**04**

- i) Draw a neat labelled diagram of the cardiac muscles. Give role of intercalated discs.
- ii) Explain the structure and function of neuromuscular junction.

**c) Answer any ONE of the following**

**04**

- i) Give significance of inflammation. Explain the role of histamine and Prostaglandins in inflammation.
- ii) Discuss the process of chemotaxis

**Q 6 a) Answer any TWO of the following**

**08**

- i) Describe the process of erythropoiesis.
- ii) Write a note on autoimmunity.
- iii) Write a note on hypersensitivity reactions.

**b) Answer any ONE of the following**

**04**

- i) Compare and contrast between Acute and Chronic inflammation
- ii) Discuss various vascular changes during inflammation.