Objective - Section A

1. Skin stores various chemicals such as
A. Fat and chloride
B. Fat and sugar
C. Fat, water, chloride, sugar, and blood
D. Fat, sugar, and chloride

2. Heat production center is situated in
A. Posterior hypothalamus nucleus and it causes shivering
B. Anterior hypothalamus nucleus and its causes sweating
C. Anterior hypothalamus nucleus and it causes shivering
D. Posterior hypothalamus nucleus and it causes sweating

3. Vitamin D3 is synthesized in skin by the action of
A. IR rays from sunlight on cholesterol
B. Action of ultraviolet rays from sunlight on cholesterol
C. An enzyme
D. A protein

4. The main function of stratified epithelium tissues is
A. Absorptive
B. Secretory
C. Transport
D. Protection of underlying cells

5. The role of some of the carbohydrates found in plasma membrane is
A. Receptors for antigens
B. Passage for ions and molecules
C. Protection of cell organelles
D. Assist in binding of hormones

6. Nutrition to the epidermis is provided by
A. Capillaries of the dermis
B. Capillaries of the epidermis
C. Stratum lucidum
D. Stratum spinosum

7. Skin being largest organ of the body is variable in thickness, the thinnest skin is present in
A. Foot
B. Palms of the hands
C. Interscapular region
D. Eyelids

8. The main functions of the lymph are
A. Returning of proteins from tissue spaces into blood
B. Acting as a route for intestinal protein absorption
C. Redistribution of the blood in the body
D. Returning carbohydrates from tissue spaces into blood

9. Lymph is a clear and colorless fluid consisting of
A. 92% water, 8% solids
B. 90% water, 10% solids
C. 96% water, 4% solids
D. 96% water, 4% solids, and some blood cells

10. Organelles having specialized functions are present in watery fluid called as
A. Protoplasm
B. Cytosol
C. Electrolytes
D. Cytoplasm

Short Questions - Section B

Each question carries 2 marks. Attempt any 13 questions.

Q1. Write down the functions of plasma membrane.

Q2. How intracellular digestive system functions inside the cell?

Q3. What are the functional roles of smooth endoplasmic reticulum?

Q4. Differentiate between mitosis and meiosis.

Q5. Write down the main functions of connective tissues.

Q6. Differentiate between fibrous and synovial joints.

Q7. What is the composition of erythrocytes and what factors are needed for erythropoiesis?

Q8. How the variation in Red Blood Cell (RBC) count takes place?

Q9. What factors are critical for the synthesis of hemoglobin?

Q10. Differentiate between agglutination and agglutinin.

Q11. Write down the stages of blood clotting.

Q12. What is ECG and how it is applicable?

Q13. Define the term lymph corpuscles.

Q14. Differentiate between external and internal respiration.

Q15. Differentiate between inspiratory reserve volume and expiratory reserve volume.

Q16. Differentiate between vital capacity and functional residual capacity.

Q17. How the carbon dioxide is transported in blood?

Long Questions - Section C

Each question carries 7 marks. Attempt any 2 questions.

Q1. a. Why nucleus is important to cells and what functions it performs in the cell? (4)

b. What is the role of interconnecting membranous canals in the cytoplasm and what are its types? (3)

Q2. What are connective tissues? Explain their structure and function in detail. (7)

Q3. a. Write down the properties and functions of RBCs. (4)

b. Explain the fate of RBCs and factors needed for erythropoiesis. (3)