

[67]**SARDAR PATEL UNIVERSITY**

Bachelor of Science (Semester 5) Examination –October 2025

BIOCHEMISTRY US05CBCH24: Human Physiology

Date: 8/10/2025 (Wednesday)

Time: 10:00 AM to 01:00 PM



Total: 70 Marks

NOTE:

1. Figure to the right indicate full marks of the questions.
2. Use of scientific calculator is allowed during the examination.
3. Make suitable assumptions and draw neat figures wherever required.

Q-1 Multiple Choice Questions**[10]**

- 1 What is the result of a failure in homeostasis?
 - A. Disease
 - B. Adaptation to the environment
 - C. Evolution
 - D. You can not deviate from homeostasis because the body will always adjust
- 2 What is the term for a cycle of events in which the status of a body condition is continuously monitored, evaluated, changed and re-monitored?
 - A. Negative feedback
 - B. Homeostasis
 - C. Positive feedback
 - D. Feedback control
- 3 What is the main mechanism by which the body regulated the core temperature when it is too hot?
 - A. Shivering
 - B. Vasoconstriction
 - C. Sweating
 - D. Increase thyroxine release
- 4 The primary gas exchange in the lungs occurs across _____ structure?
 - A. Bronchi
 - B. Bronchioles
 - C. Alveolar ducts
 - D. Alveoli
- 5 What is trachea also known as _____?
 - A. Oesophagus
 - B. lungs
 - C. Windpipe
 - D. Larynx
- 6 The majority of carbon dioxide in the blood is transported in the form of _____.
 - A Dissolved carbon dioxide.
 - B Carbaminohemoglobin.
 - C Bicarbonate ion.
 - D Carbon monoxide.
- 7 Which enzyme begins the digestion of carbohydrate in the mouth?
 - A. Pepsin
 - B. Amylase
 - C. Lipase
 - D. trypsin
- 8 The visceral pericardium is also known as _____.
 - A. epicardium
 - B. Myocardium
 - C. Endocardium
 - D. None of these



- 9 Which of the following portion of the stomach opens into the small intestine?
- A. Cardiac portion B. Body portion
C. Pyloric portion D. None of these
- 10 The basic functional unit of the kidney is called ____
- A. Nephron B. Glomerulus
C. Bowmanns capsule D. Collecting duct

Q-2 Short Answer Questions (Attempt TEN out of TWELVE)

[20]

1. Define Homeostatic and feedback system.
2. Difference between negative and positive feedback system.
3. Define intracellular fluid and extracellular fluid with example.
4. Define internal and external respiration.
5. Define acidosis and alkalosis.
6. List the factors affecting affinity of Hb for Oxygen.
7. Define digestion.
8. List the organs of GI tract and accessory digestive organs.
9. Why heart is known as double pump system?
10. Give definition of GFR.
11. Explain Renal threshold.
12. Write structural classification of Neurons.



- Q-3** Give descriptive answers of components and functions of 11 system of the human body. [10]

OR

- (A) Give an account on Structural organization of human body in detail. [5]
(B) Write short note on Mechanism of homeostasis. [5]

- Q-4** (A) Describe the transport of oxygen and carbon dioxide. [10]

OR

- Q-4** (A) Discuss in detail: Phases of respiration. [5]
(B) Write a short note on factors affecting the affinity of Hb for oxygen. [5]

- Q-5** Give descriptive answers for the following questions. [10]

- (A) Discuss the Absorption of protein.
(B) Write a note on Cardiac cycle.

OR

- (A) Write a note on Structure of human heart. [5]
(B) Explain the digestion of carbohydrate. [5]

- Q-6** Give descriptive answers for the following questions. [10]

- (A) Give a detailed note on structure of nephron. [5]
(B) Write short note on renal plasma clearance and GFR? [5]

OR

- (A) Explain chemical and electrical nerve impulse transmission. [10]