

## **CBT DECEMBER 2025**

### **CLASS XI BIOLOGY**

#### **Chapter: Breathing & Exchange of Gases, Body Fluids and Circulation**

**I. Read the paragraph below and answer the questions:**

**During a football match, a player was seen panting heavily after running continuously. His breathing rate and depth both increased to meet oxygen demand of muscles. The blood test showed increased lactic acid concentration.**

**1.The rapid breathing after running is an example of:**

- a) Apnea**
- b) Hyperventillation**
- c) Hypoventillation**
- d) Dyspnoea**

**2.Increased lactic acid concentration leads to:**

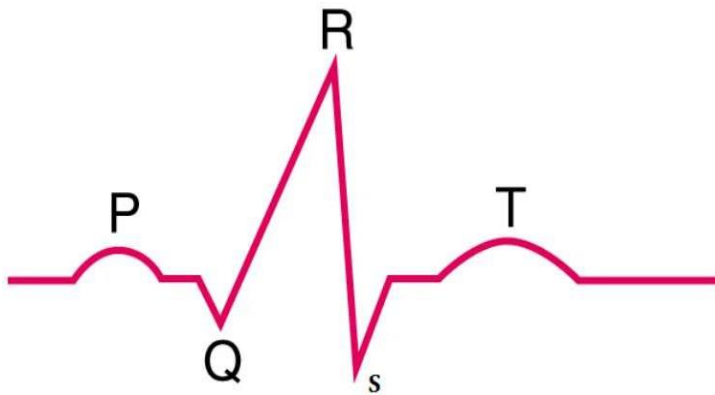
- a) Rise in blood pH (alkalosis)**
- b) Fall in blood pH (acidosis)**
- c) No change in blood Ph**
- d) Increase in oxygen solubility in plasma**

**3.Assertion: Oxygen demand in muscles increases during exercise.**

**Reason: Higher ATP requirement increases the rate of aerobic respiration.**

- a)Both A and R are true and R is the correct explanation of A**
- b) Both A and R are true but R is not the correct explanation of A**
- c)A is true, R is false**
- d)A is false, R is true**

**II. Study the standard ECG graph below and answer the following questions.**



**4. A prolonged PR interval in ECG indicates**

- a) First-degree heart block
- b) Ventricular fibrillation
- c) Myocardial infarction
- d) Hypertension

**5. In a healthy person the heart rate is normally calculated from the ECG by measuring the**

- a) Duration of P-wave
- b) Interval between two successive T-waves
- c) Interval between two successive R-waves
- d) Duration of PR interval

**6. The standard duration of a normal human ECG cycle is approximately:**

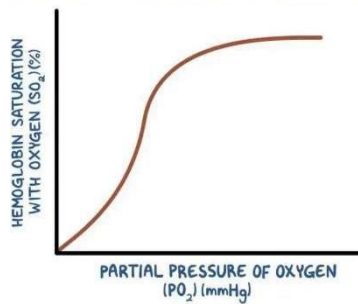
- a) 0.5s
- b) 0.8s
- c) 0.2s
- d) 2.0s

7. Which of the following would be absent in the ECG if the SA node fails to function?

- a) P-wave
- b) QRS Complex
- c) T-wave
- d) ST segment

III. Observe the diagram below and answer the following questions:

THE OXYGEN-HEMOGLOBIN DISSOCIATION CURVE



8. The sigmoid shape of the Oxyhaemoglobin Dissociation Curve is due to:

- a) Linear binding of oxygen molecules to haemoglobin
- b) Cooperative binding of oxygen to haemoglobin
- c) Binding of CO<sub>2</sub> to haemoglobin
- d) High solubility of O<sub>2</sub> in plasma

9. During heavy exercise, which factor contributes most to the rightward shift of the curve?

- a) Increase in CO<sub>2</sub> and lactic acid
- b) Decrease in temperature
- c) Increase in blood pH
- d) Decrease in 2,3-BPG

10. Assertion (A): At high altitudes, hyperventilation initially causes a leftward shift of the ODC.

Reason (R): Hyperventilation decreases blood CO<sub>2</sub> concentration, leading to respiratory alkalosis.

- a) Both A and R are true and R is the correct explanation of A**
- b) Both A and R are true but R is not the correct explanation of A**
- c) A is true but R is false**
- d) A is false but R is true**