SILVER HILLS PUBLIC SCHOOL
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CYCLIC TEST-3 2024-25

Name			Subject: BIOLOGY	Maximum Marks: 25
Class: XI	Section:	Roll No.	Duration: 1Hr.	Date:

General Instructions
Section A carries MCQs 1to 6 with 1mark each.
Section B carries Questions 7to 9 with 2 marks each.
Section C carries Questions 10 to 12 with 3 marks each.
Section D carries Case Based Questions with 1 mark each.

SECTION A

1. For carbohydrates as a respiratory substrate, the respiratory quotient (RQ) is:

a) 0.7 b) 0.8 c) 1.0 d) 1.2

2. The tidal volume refers to:

a) The amount of air remaining in the lungs after forceful exhalation
b) The volume of air moved in and out of the lungs during normal breathing
c) The amount of air forcibly inhaled after normal inspiration
d) The volume of air expelled from the lungs during a forceful exhalation

3. What percentage of blood is composed of plasma?

a) 25% b) 45% c) 55% d) 75%

4. A person with blood group AB can donate blood to:

a) Only A b) Only B c) Only AB d) A, B, and AB

5. What is the function of the tricuspid valve?

a) Prevents backflow from left atrium to left ventricle.

b) Prevents backflow from right atrium to right ventricle.

c) Prevents backflow from aorta to left ventricle.

d) Prevents backflow from pulmonary artery to right ventricle.

6. Assertion (A): A person with blood group O+ve can donate blood to anyone.

Reason (R): O+ve blood lacks antigens A, B, and Rh, making it universally acceptable for transfusion.

Options:

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.

SECTION B

7. "Partial pressure of gases plays a crucial role in respiration." How does the partial pressure gradient of oxygen facilitate its diffusion into the blood?

8. Name the different forms in which carbon dioxide is transported in the blood.

9. Justify why the pulmonary arteries and veins are exceptions to the general rule of blood oxygenation.

SECTION C

10. What is an ECG? Draw a labelled diagram of a normal ECG and explain the significance of the P wave, QRS complex, and T wave.

11. Erythroblastosis foetalis occurs due to Rh incompatibility between the mother and the foetus.

a) What is Rh incompatibility, and how does it lead to erythroblastosis foetalis?

b) How can erythroblastosis foetalis be prevented in Rh-negative mothers?

12. Explain the following respiratory volumes and their significance:

a) Tidal Volume (TV)

b) Residual Volume (RV)

c) Vital Capacity (VC)

SECTION D

13. A patient was admitted to the hospital due to excessive blood loss after an accident. The doctor advised a blood transfusion and mentioned that plasma proteins and platelets play a crucial role in saving the patient's life.

1. Why are plasma proteins important?
2. What is the role of platelets in stopping blood loss?
3. Name two plasma proteins and their respective functions.
4. If the patient belongs to blood group O, which blood group(s) can be safely transfused to them? Explain.