

## PRACTICE WORKSHEET 2: CIRCULATORY SYSTEM AND EXCRETORY SYSTEM | CLASS 5 SCIENCE

### Part A: Multiple Choice Questions

1. Which chamber of the heart receives oxygen-poor blood from the body?
    - a) Left atrium
    - b) Right atrium
    - c) Left ventricle
    - d) Right ventricle
  2. What is the primary function of platelets in the blood?
    - a) Transport oxygen
    - b) Fight infections
    - c) Help in blood clotting
    - d) Carry nutrients
  3. Which of the following is not a part of the urinary system?
    - a) Ureter
    - b) Pancreas
    - c) Bladder
    - d) Urethra
  4. The capillaries connect which two types of blood vessels?
    - a) Veins and arteries
    - b) Arteries and heart
    - c) Heart and veins
    - d) Ureters and kidneys
  5. What substance is reabsorbed in the kidneys to maintain the body's water balance?
    - a) Urea
    - b) Glucose
    - c) Salt
    - d) Water
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### Part B: Fill in the Blanks

1. The largest artery in the body is the \_\_\_\_\_.
  2. Blood in veins is usually \_\_\_\_\_ in oxygen.
  3. The \_\_\_\_\_ filters blood and forms urine.
  4. The walls of \_\_\_\_\_ are very thin to allow exchange of gases and nutrients.
  5. Waste substances from the blood are filtered into the \_\_\_\_\_ in the kidneys.
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### Part C: True or False

1. The right side of the heart pumps blood to the entire body. (True/False)
  2. The urinary bladder stores urine temporarily. (True/False)
  3. Arteries have valves to prevent backflow of blood. (True/False)
  4. The kidneys are located in the chest cavity. (True/False)
  5. Red blood cells carry oxygen using a protein called hemoglobin. (True/False)
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### Part D: Short Answer Questions

1. Explain the difference between oxygenated and deoxygenated blood.
  2. How do kidneys help maintain the body's water balance?
  3. Why do arteries have thick walls compared to veins?
  4. Describe how the heart works as a double pump.
  5. Draw a diagram of the human heart and label its four chambers.
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### Part E: Long Answer Questions

1. Explain the complete process of blood circulation, starting from the heart and back to the heart. Use a diagram to illustrate your explanation.
  2. How does the excretory system maintain the body's chemical balance? Include a diagram of the urinary system in your explanation.
  3. Compare and contrast arteries, veins, and capillaries in terms of structure, function, and location.
  4. Describe the filtration process in the kidneys, detailing how blood is filtered and waste is excreted as urine.
  5. List and explain five disorders related to the circulatory or excretory systems, and suggest ways to prevent them.
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### Answer Key with Detailed Explanations

#### Part A: Multiple Choice Questions

1. b) Right atrium
2. c) Help in blood clotting
3. b) Pancreas
4. a) Veins and arteries
5. d) Water

#### Part B: Fill in the Blanks

1. Aorta
2. low
3. kidney
4. capillaries
5. nephron

#### Part C: True or False

1. False
2. True
3. False
4. False
5. True

#### Part D: Short Answer Questions

1. **Oxygenated blood** contains a high level of oxygen and is carried by arteries from the lungs to the rest of the body. **Deoxygenated blood** has low oxygen levels and is carried by veins back to the lungs for oxygenation.
2. Kidneys reabsorb water from the filtered blood in the nephron's tubules, maintaining the body's hydration. If the body has excess water, it is excreted as urine.
3. Arteries have thick walls to handle the high pressure of blood pumped from the heart, whereas veins have thinner walls since blood flows at a lower pressure.
4. The heart's right side pumps deoxygenated blood to the lungs, while the left side pumps oxygenated blood to the body. This "double pump" ensures efficient circulation.

#### Part E: Long Answer Questions

1. **Blood circulation process:**
  - Oxygen-poor blood enters the right atrium → right ventricle → lungs for oxygenation.
  - Oxygen-rich blood returns to the left atrium → left ventricle → body.
2. The excretory system filters blood, removes toxins, and balances water and electrolytes. The urinary system includes kidneys, ureters, bladder, and urethra.
3. **Arteries:** Thick-walled, carry oxygenated blood away from the heart.  
**Veins:** Thin-walled, carry deoxygenated blood to the heart.  
**Capillaries:** Tiny vessels for nutrient and gas exchange between blood and tissues.

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4. Blood enters the kidney, where nephrons filter waste. Useful substances like water and glucose are reabsorbed, while toxins and urea form urine, which passes through ureters to the bladder.
5. **Disorders:**
  - **High blood pressure:** Reduce salt intake, exercise.
  - **Kidney stones:** Stay hydrated, avoid excess salt.
  - **Anemia:** Eat iron-rich foods.
  - **Heart disease:** Avoid fatty foods, exercise.
  - **Urinary tract infection:** Maintain hygiene, drink water.

Would you like to further elaborate on any section?