The City School

Science
Class 8
Topic: Respiration and Circulation
Reinforcement Worksheet

Name:_____Sec:_____Date:_____

Q.1 Choose the best answer.

1) Which type of blood vessels carries blood away from the heart?
   a) veins b) arteries
   c) capillaries d) arteries and veins

2) What part of the blood carries minerals, vitamins, sugar and other foods to the body's cells?
   a) plasma b) platelets
   c) red cells d) white cells

3) Which of the following can best be compared to soldiers?
   a) capillaries b) red blood cells
   c) white blood cells d) platelets

4) What body structure protects the lungs from physical injury?
   a) cartilage b) tiny sac
   c) rib cage d) diaphragm

5) Inhaled air contains about 78 % nitrogen. What is the approximate percentage concentration of nitrogen in exhaled air?
   a) 8% b) 10%
   c) 78% d) 16%

6) When we inhale:
   a) intercostal muscles contract and ribs move down
   b) diaphragm muscles contract and the ribs move up
   c) diaphragm muscles contract and the ribs move down
   d) intercostal muscles contract and the diaphragm muscles relax

7) Inhalation and exhalation of air is called:
   a) breathing b) diffusion
   c) respiration d) gaseous exchange

7) Which statement is **not correct** when comparing respiration and burning a fuel?
a) respiration is fast and not controlled, burning is rapid and controlled
b) both respiration and burning produce water and carbon dioxide
c) both respiration and burning use up oxygen
d) both respiration and burning release heat energy, but only burning gives out light as well

Q.2 Fill in the blanks.

1) Another name for the wind pipe is _____.
2) Lungs are made up of tiny sac like structures called _____.
3) There are _____ types of blood vessels.
4) Pulmonary artery carries _____ blood.

Q.3 Write True or False. If the statement is false, then re-write it to make it correct.

1. Pulmonary vein contains oxygenated blood.

   _____

2. Upper chambers of human heart are bigger than lower chambers.

   _____

3. Oxygenated blood flows through veins.

   _____

4. Exchange of gases takes place through thin walls of capillaries.

   _____

5. The Blood Circulatory System is made up of lungs, blood and blood vessels.

   _____

6. Human heart has five chambers.

   _____

7. The right side of the heart receives oxygenated blood.

   _____

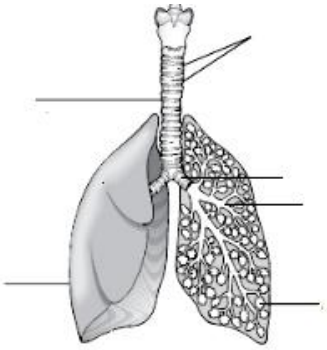
Q.4 Match the following arteries with the organs in which they supply blood & write the correct answer in Column 'C'.

Column A – Artery	Column B - Organs	Column C
i) Pulmonary	a. Head and arms	
ii) Renal	b. Lungs	
iii) Hepatic	c. Legs	
iv) Carotid	d. Kidney	
v) Sciatic	e. Liver	

Q.5 Differentiate between the following:

BREATHING	**RESPIRATION**
ARTERIES	**VEINS**
RED BLOOD CELLS	**WHITE BLOOD CELLS**
INHALED AIR	**EXHALED AIR**
AEROBIC RESPIRATION	**ANAEROBIC RESPIRATION**

Q.6 Label the diagram.



The human _____ system.

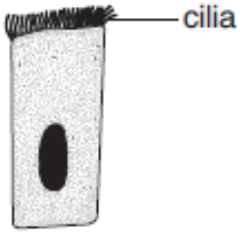
a) How is the alveoli adapted to perform its function?

_____

_____

c) The diagram below shows a ciliated cell from the lining of the airway.

(i) What is the function of cilia in the airway?



_____

_____

(ii) What effect does cigarette smoke have on the cilia?

_____

_____

(iii) Name the substance(s) present in cigarette smoke, which causes addiction to smoking.

_____

_____

d) Describe the role of the following structures in breathing:

(i) diaphragm:

_____

_____

(ii) ribs:

_____

_____

(iii) intercostal muscles:

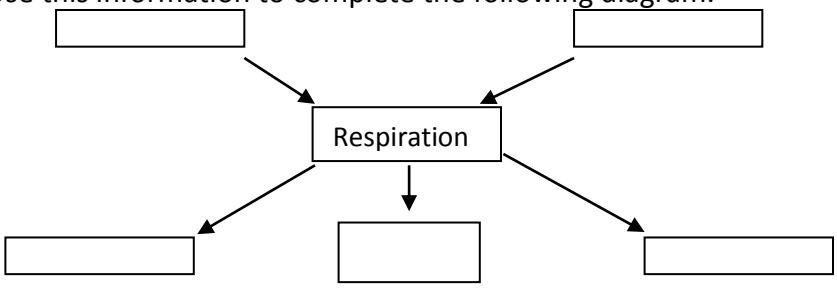
_____

_____

Q.7 Read the following information.
During the process of respiration, chemical reaction takes place.
These chemical reactions:

- Use up oxygen and glucose
- Produce carbon dioxide and water
- Release energy

Use this information to complete the following diagram.



Q.8 Lactic Acid is produced in muscles cells after a period of exercise.

(a) Name the process which produces lactic acid.

_____

(b) State the word equation for the above mentioned process.

_____

(c) How is this process different from respiration?

_____

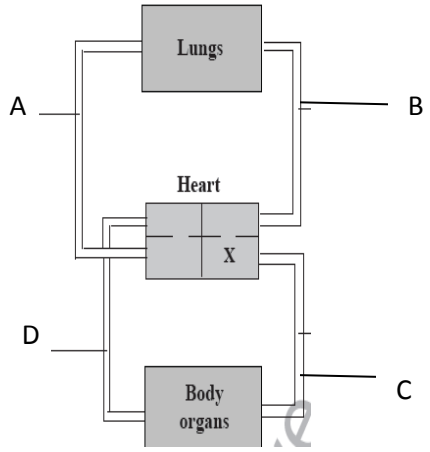
_____

(d) Explain why the blood flow to the muscles increases during exercise.

_____

_____

Q.9 The diagram shows a plan of part of the circulation.



(a) Name the blood vessels labeled:

(i) A: _____

(ii) B: _____

(b) From the diagram given above, identify the letter for the blood vessels which carry oxygenated blood: _____

(c) How does the concentration of oxygen change as the blood passes through the organs?

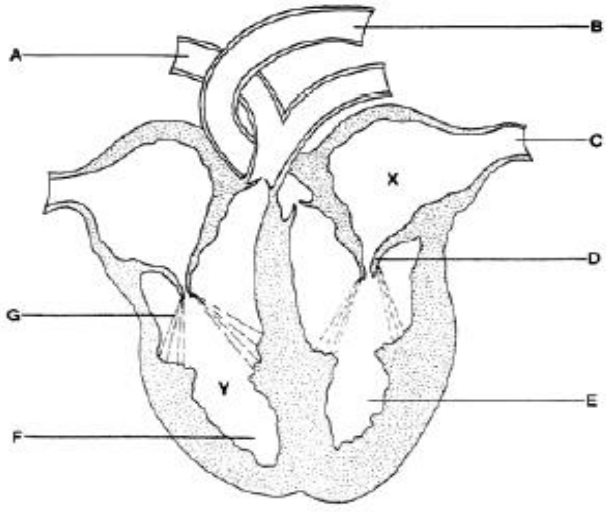
_____

(d) Identify the chamber of the heart labelled X: _____

Q.10 The table gives a list of statements concerned with arteries, veins and capillaries. Tick (√) in the correct box to indicate which statement applies to which type of blood vessel.

	ARTERIES	VEINS	CAPILLARIES
Pick up oxygen from the alveoli in the lungs			
Carry blood at high pressure			
Are in close contact with cells of the body			
Carry blood back to the heart			

Q.11 Look at the diagram of the human heart and answer the questions.



a) Make a comparison between the oxygen concentration in the blood at points **X** and **Y** on the diagram.

_____

_____

b) What is the function of D in the heart?

_____

c) How is Pulmonary artery different from the rest of the arteries in the body?

_____

d) Identify **E** and **F** parts in the diagram. Explain why part E exerts more pressure than F?

_____

_____

e) What is the function of hemoglobin in red blood cells?

_____

_____