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’.

<table>
<thead>
<tr>
<th>Column A – Artery</th>
<th>Column B - Organs</th>
<th>Column C</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Pulmonary</td>
<td>a. Head and arms</td>
<td></td>
</tr>
<tr>
<td>ii) Renal</td>
<td>b. Lungs</td>
<td></td>
</tr>
<tr>
<td>iii) Hepatic</td>
<td>c. Legs</td>
<td></td>
</tr>
<tr>
<td>iv) Carotid</td>
<td>d. Kidney</td>
<td></td>
</tr>
<tr>
<td>v) Sciatic</td>
<td>e. Liver</td>
<td></td>
</tr>
</tbody>
</table>

Q.5 Differentiate between the following:

<table>
<thead>
<tr>
<th>BREATHING</th>
<th>RESPIRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ARTERIES</th>
<th>VEINS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RED BLOOD CELLS</th>
<th>WHITE BLOOD CELLS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INHALED AIR</th>
<th>EXHALED AIR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AEROBIC RESPIRATION</th>
<th>ANAEROBIC RESPIRATION</th>
</tr>
</thead>
</table>
Q.6 Label the diagram.

The human __________________ system.

da) 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.

[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.

<table>
<thead>
<tr>
<th>Statements</th>
<th>ARTERIES</th>
<th>VEINS</th>
<th>CAPILLARIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pick up oxygen from the alveoli in the lungs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carry blood at high pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are in close contact with cells of the body</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carry blood back to the heart</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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?

________________________________________________________________________