

A-Level Biology

Name: _____ Score: _____

1. A "closed double circulation" means that:
 - ☐ blood stays in vessels and passes through the heart twice per circuit
 - ☐ blood flows freely through body spaces
 - ☐ blood passes through the heart once
 - ☐ there is only one loop
2. The straw-coloured liquid part of blood, which carries the cells, is the _____.

3. Where the partial pressure of oxygen is high (the lungs), haemoglobin:
 - ☐ becomes almost fully saturated with oxygen
 - ☐ releases all its oxygen
 - ☐ cannot bind oxygen
 - ☐ breaks down
4. Most carbon dioxide is carried in the blood as _____ ions in the plasma.

5. Ventricles have thicker walls than atria because they:
 - ☐ must pump blood out of the heart
 - ☐ only push blood a short distance down
 - ☐ hold more blood cells
 - ☐ contain the pacemaker
6. The circulation that carries blood from the heart to the lungs and back is the _____ circulation.

7. The main job of a red blood cell is to:
 - ☐ carry oxygen
 - ☐ fight infection
 - ☐ clot the blood
 - ☐ make antibodies
8. In respiring tissues, where oxygen is low, haemoglobin:

- ☐ unloads its oxygen for the cells to use
- ☐ becomes fully saturated
- ☐ gains more oxygen
- ☐ turns into carbon dioxide

9. The thickest, most muscular chamber, which pumps blood around the whole body, is the left _____.

10. The oxygen dissociation curve is S-shaped (sigmoid).

- ☐ True ☐ False

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1. **blood stays in vessels and passes through the heart twice per circuit**

Closed = blood always in vessels; double = it passes through the heart twice (pulmonary then systemic).

2. **plasma**

Plasma carries cells, dissolved nutrients, hormones and waste.

3. **becomes almost fully saturated with oxygen**

At high oxygen partial pressure (lungs), haemoglobin loads up and becomes nearly fully saturated.

4. **hydrogencarbonate**

Formed from CO₂ and water in the red blood cells, then carried in the plasma.

5. **must pump blood out of the heart**

Atria only push blood into the ventricles below; ventricles pump blood out, so need thick muscular walls.

6. **pulmonary**

Pulmonary = to the lungs; systemic = to the rest of the body.

7. **carry oxygen**

Red blood cells are packed with haemoglobin to carry oxygen; white cells handle defence.

8. **unloads its oxygen for the cells to use**

At low oxygen partial pressure (tissues), haemoglobin releases oxygen to the cells.

9. **ventricle**

The left ventricle drives the systemic circulation (whole body), so it needs the most muscle.

10. **True**

It is S-shaped: binding one oxygen makes the next bind more easily, giving the characteristic sigmoid curve.