

The heart: practice questions

7 questions • 26 marks • mark scheme at the back

For Cambridge IGCSE Biology 0610 (and 0970, which has the same content). **Supplement** is Extended content, only examined on Papers 2 and 4.

Name

Total / 26

- 1** State three ways in which the activity of the heart may be monitored. **[3 marks]**

- 2** **Supplement** **[3 marks]**

Explain the importance of the septum in the heart.

- 3** **Supplement** **[3 marks]**

Explain why the muscle wall of the left ventricle is thicker than that of the right ventricle.

7 Discuss the roles of diet and exercise in reducing the risk of coronary heart disease. **[4 marks]**

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Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [3]

- ECG (1)
- pulse rate (1)
- listening to the sounds of the valves closing / using a stethoscope (1)

2. [3] Supplement

- it separates the left and right sides of the heart (1)
- oxygenated blood on the left and deoxygenated blood on the right (1)
- stops the blood mixing, so blood to the body is fully oxygenated (1)

3. [3] Supplement

- left ventricle pumps blood to the whole body (1)
- right ventricle pumps blood only to the lungs / a shorter distance (1)
- so left ventricle must produce a higher pressure / the lower pressure protects the lung capillaries (1)

4. [4] Supplement

- ventricles contract (1)
- atrioventricular valves close, stopping backflow into the atria (1)
- semilunar valves open (1)
- blood forced into the aorta and pulmonary artery (1)
- semilunar valves close when ventricles relax to prevent backflow (1)
- Max 4

5. [5] Supplement

- (a) $126 - 72 = 54$ (1)
- $54 \div 72 \times 100 = 75\%$ (1)
- (b) muscles respire faster / more aerobic respiration (1)
- need more oxygen and glucose (1)
- faster heart rate delivers these faster and removes carbon dioxide / lactic acid faster (1)

6. [4]

- (a) fatty deposits build up in the coronary arteries (1)
- which blocks / narrows the arteries so less blood flows (1)
- less oxygen / glucose reaches the heart muscle, (may cause) a heart attack (1)
- (b) genetic predisposition / age / sex (1) allow family history

7. [4]

- diet low in saturated fat reduces fatty deposits (1)
- less salt / more fruit and vegetables helps healthy arteries and blood pressure (1)
- exercise strengthens the heart muscle / lowers blood pressure (1)
- exercise helps control body mass (1)
- other risk factors such as age, sex or genes cannot be changed (1)
- Max 4