

**AQA, OCR, Edexcel**

**GCSE Science**

# **GCSE Biology**

**The Heart and Blood Vessels  
Answers**

Name:

**M M E**

**Mathsmadeeasy.co.uk**

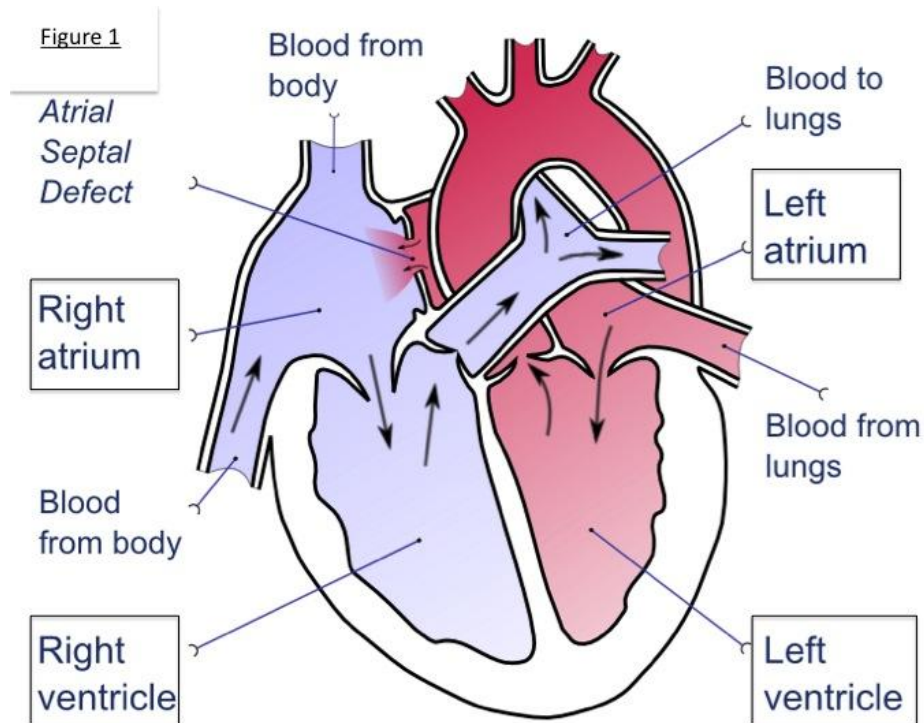
**Total Marks: /27**

Q1: The heart is part of which organ system?

A= Circulatory System

(1 mark)

Q2: Figure 1 shows a cross section of the human heart.



i) Label the 4 chambers of the heart shown in figure 1.

A= 1 mark for each correct label

(4 marks)

ii) Which part of the circulatory system takes deoxygenated blood back to the lungs?

A= Pulmonary Artery

(1 mark)

iii) Which part of the circulatory system does oxygenated blood leave the heart to travel around the body?

A= Aorta

(1 mark)

Q3: The heart is an example of a muscle. What sort of muscle is the heart?

A= Involuntary

(1 mark)

Q4: Using your knowledge of the heart explain how the heart is specialised to perform its function within the circulatory system.

A= Marks awarded for 3 of the following:

- Involuntary
- Thick walls
- Strong muscles
- Large volume

(3 marks)

Q5: Calculate the cardiac output of the heart if it pumps at a rate of 80 beats per minute and has a stroke volume of 70ml.

A= 1 mark awarded for showing calculation  $80 \times 70 = 5600 \text{ ml/min}$

Heart rate x stroke volume = Cardiac output

1 mark for correct answer

5.6L/min

Q6: In a healthy heart what prevents the back flow of blood?

A= Valves

(1 mark)

Q7: What are the 3 types of blood vessels?

A= 1 mark for each of the following points.

- Arteries
- Veins
- Capillaries

(3 marks)

Q8: What is the role of the capillaries in the circulatory system.

A= Gas exchange

(1 mark)

Visit <http://www.mathsmadeeasy.co.uk/> for more fantastic resources.

Q9: Discuss the functions of the 3 types of blood vessels.

A= 2 marks for the following for each type of blood vessel.

Artery

- Carry blood away from the heart
- Thick Walls
- Small blood passage/ Large lumen
- Blood under high pressure

Vein

- Carry blood to the heart
- Thin walls
- Large blood passage/ small lumen
- Blood under low pressure
- Contain valves- prevent backflow

Capillaries

- 1 cell thick
- Very low blood pressure
- Gas exchange
- Found in muscles/ lungs

(6 marks)

Q10: Explain what happens to the heart to meet the demands of exercise.

A= Marks awarded for any 2 of the following:

- Beats faster/ increased heart rate
- Contracts more powerfully/ increased stroke volume
- Pumps more blood

(2 marks)

Q11: How can the change in heart rate be measured?

A= Pulse rate

(1 mark)