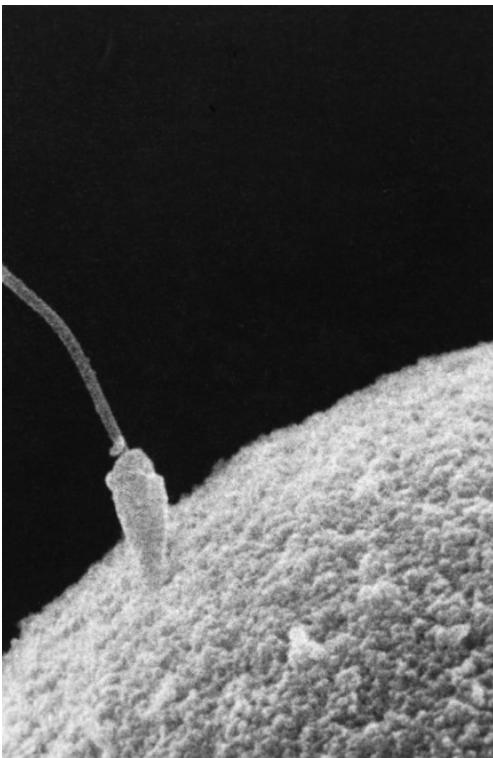


2nd Year Science, Midterm 2022

Mr. A. Goodison

Student Name _____



Answer all questions in the spaces provided.

Good luck!

An image of a sperm meeting an egg.

Question	Marks	Awarded
Total	47	
Grade descriptor		

Junior Cycle	
Percentage	Grade Descriptor
≥ 90 to 100	Distinction
≥ 75 and < 90	Higher Merit
≥ 55 and < 75	Merit
≥ 40 and < 55	Achieved
≥ 20 and < 40	Partially Achieved
≥ 0 and < 20	Not Graded (NG)

Question 1

Use the following terms to fill in the blanks of the paragraphs.

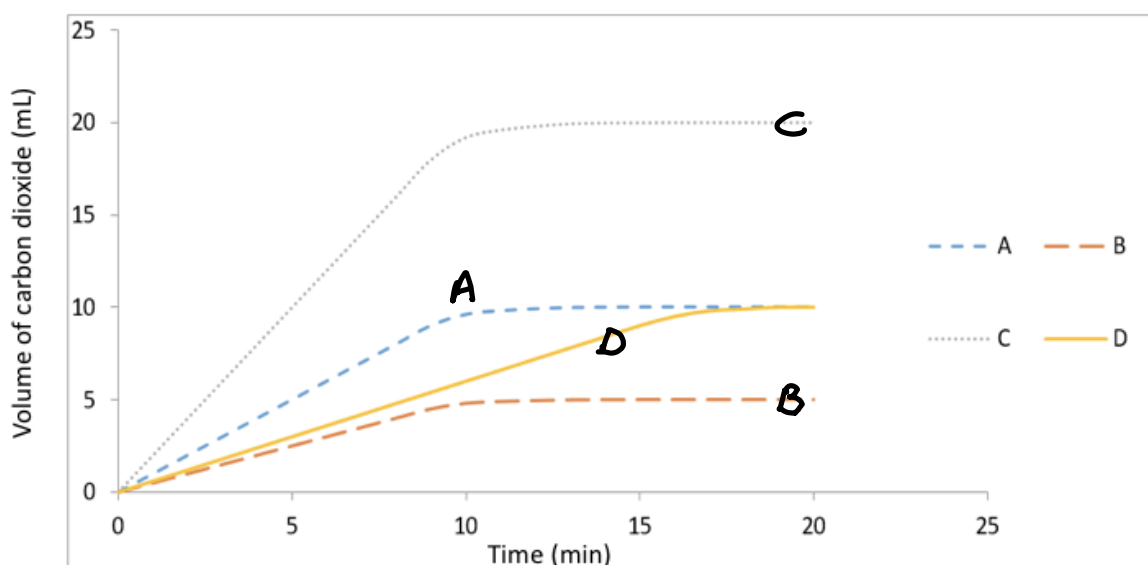
(4)

Temperature, surface area, concentration, catalyst

- a) Increasing the _____ of the reactants means the particles will have more energy and will move about more. This will cause more collisions and give the particles more energy for an effective collision.
- b) Increasing the _____ means more reactant particles will be exposed. This means there will be more collisions between reactants causing the products to form at a faster rate
- c) Increasing the _____ of reactants means there will be more particles and hence more collisions. This will cause the products to form at a faster rate
- d) Adding a _____ decreases the amount of energy needed for an effective collision. Therefore, more collisions will be effective and cause the products to form at a faster rate.

Question 2

Hydrochloric acid is a liquid which undergoes a reaction with the metal magnesium (solid) to produce Hydrogen gas. The graph below shows the volume of hydrogen released (Y-axis) against time (X-axis). In each of the cases labelled A, B, C and D the following variables were kept constant: temperature, volume of hydrochloric acid used, and the concentration of hydrochloric acid used.



(b) Which curve (A, B, C or D) had the **fastest** rate of reaction at the beginning? Justify your answer.

(c) In which case, A, B, C or D, was the least mass of magnesium used? Explain your answer. (2)

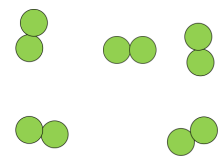
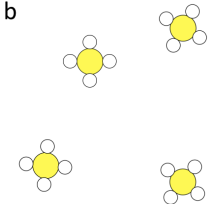
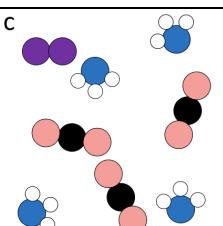
(d) Explain any one possible difference between the conditions used during case A and the conditions used during case D. (2)

(g) Give one advantage of using a graph to present data. (1)

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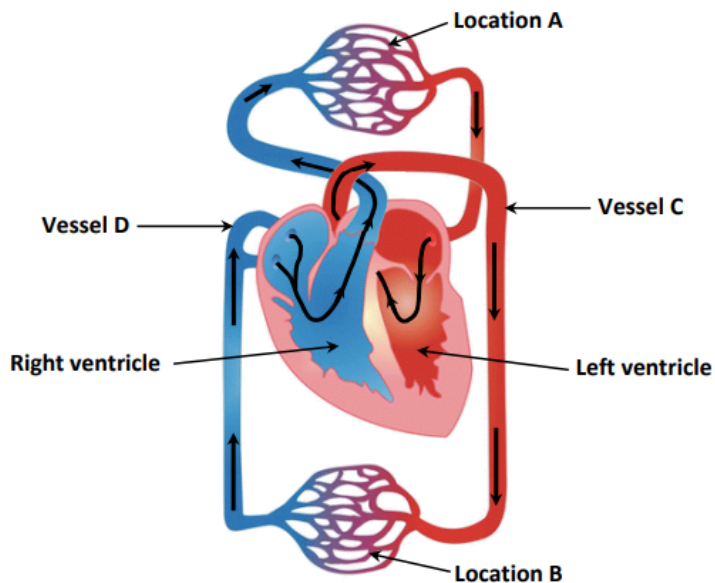
Question 3

Complete the table below to decide if these gasses are elements, compounds or mixtures. Justify your answer in each case. (6)

Diagram	Elements, compound or mixture	Justification
<p>a</p> 		<hr/> <hr/> <hr/> <hr/>
<p>b</p> 		<hr/> <hr/> <hr/> <hr/>
<p>c</p> 		<hr/> <hr/> <hr/> <hr/>

Question 4

The diagram shows the human heart and some of the blood vessels of the circulatory system. The arrows indicate the direction in which the blood flows as it travels around the body.



(a) The table below lists statements about the diagram. Indicate if each statement is true or false by putting a tick (✓) in the correct column.

(4)

Statement	True	False
The blood in vessel C is deoxygenated.		
The organs found at location A are part of the respiratory system.		
Carbon dioxide leaves the blood at location B.		
Vessel D is a vein.		

Vessel C has thicker walls than vessel D. Explain why. (1)

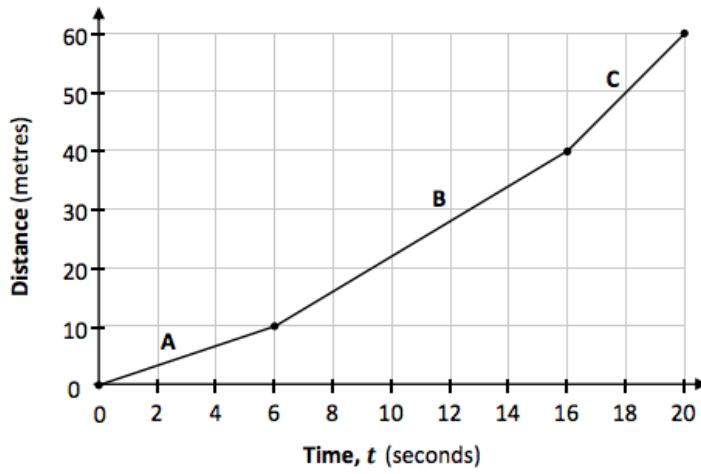
1. Name the parts of the blood that carry out the following functions. (4)

Function	Name of the component of blood
Carry oxygen	
Fight infection and disease	
Clot the blood	
Liquid part that transports nutrients and waste (eg. glucose and carbon dioxide)	

Question 5

Martin took part in a 60 metre race.

The graph below shows his distance-time graph. The graph is in three sections, labelled A, B, and C



(a) How many seconds did it take Martin to finish the race? _____ (1)

(b) What distance had Martin travelled after 16 seconds? _____ (1)

(c) Which was Martin's fastest section (A, B, or C) of the race? Justify your answer. (2)

(d) Find Martin's speed during his fastest section of the race, include the units in your answer. (2)

Question 6

(a) Describe one difference between sexual and asexual reproduction. (2)

(b) Outline evolution by natural selection.

(3)

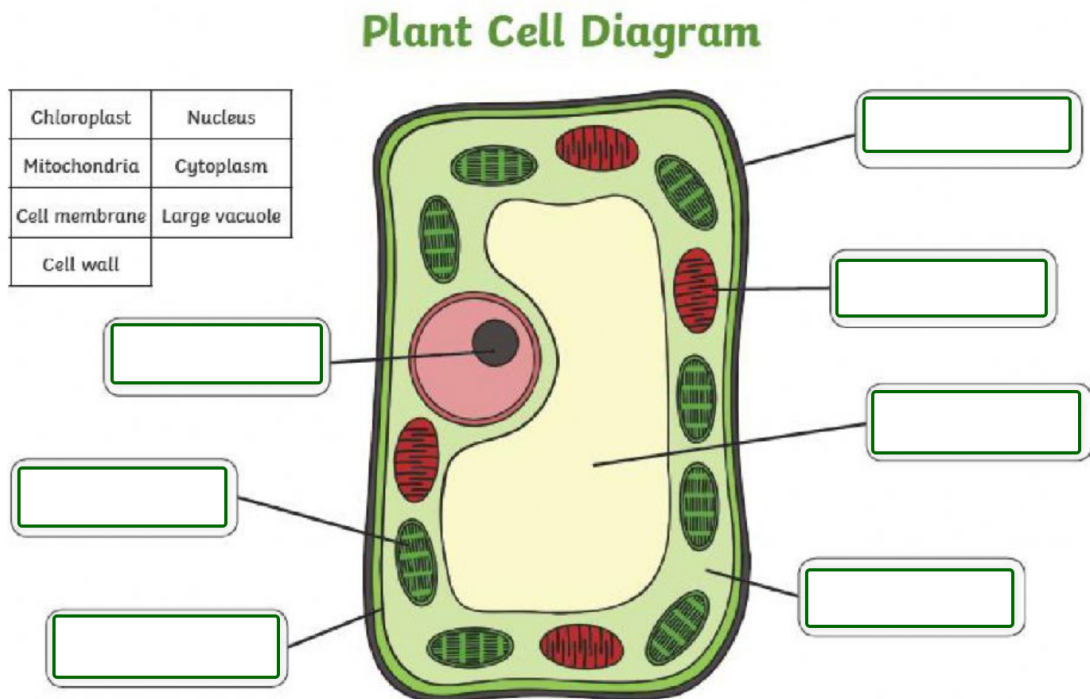
Describe one difference between a physical change and a chemical change.

(2)

Question 7

(a) Label the parts of the plant cell

(6)



(b) Name two differences between plant and animal cells.

(2)
