Class:
G O S F R D

Part A /16	
Part B / 27	
TOTAL	/43

Student Name:
Shiane

ANSWER SHEET for MULTIPLE CHOICE -Clearly mark 1 answer for each question.

QUESTION	A	B	C	D
1			✓	
2			✓	
3		✓		
4				✓
5			✓	
6			✓	
7	✓			
8				✓
9			✓	
10				✓
11	✓			
12	✓			
13			✓	
14		✓		
15		✓		
16				✓

Part II

27 marks
Attempt Questions 16-19.
Allow about 35 minutes for this section

Question 16 (15 marks) **Marks**

The paragraph below is a student's write-up of an experiment.

1. I put 100 mL of water in a test tube and measured its temperature. It was 18ºC. Then I put some of the crystals in it and stirred the mixture to dissolve the crystals. I kept stirring until some remained on the bottom of the tube no matter how much longer I stirred.
2. I filtered the mixture and then evaporated all the water from the solution. I weighed the amount of solid left behind and found that 6.0 g had been dissolved.
3.Then I did it again but this time I heated the water using a Bunsen burner, gauze mat and tripod while the thermometer was suspended form a retort stand using water at 29ºC. I found that 8.0 g dissolved.
4. I repeated it at 40ºC and at 47ºC and got 10.0 g and 11.2 g as my results

(a) Write an aim appropriate for the experiment. **1**

The aim of this experiment is to see how many of the crystals disolve in 100ml of water, and change the waters temperature by heating it up every time an measuring how many of the crystals disolve.

(b) Complete the table for the student's results. **2**

Temperature of water (°C)	Amount of crystals disolved (g)
18°C	6.0g
29°C	8.0g
40°C	10.0g
47°C	11.2g

(c) Identify the independent and dependent variable for this experiment. **2**

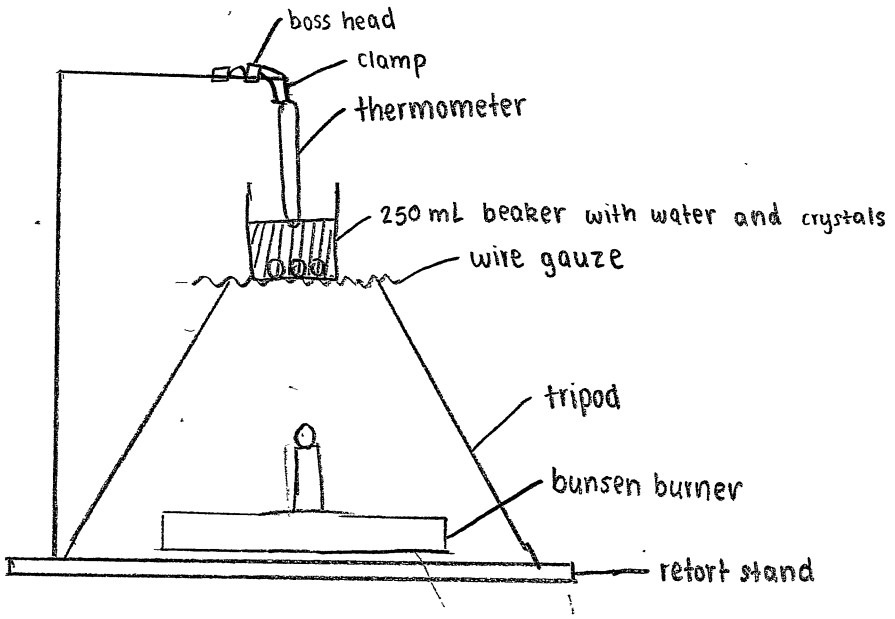
The idependant variable is the temperature of the water.

The dependant variable is the amount of crystals disolved.

(d) Identify a variable that needs to be controlled during the experiment to make it a fair or valid test. **1**

You will need to control the amount and type of the crystal that needs to be dissolved in order to achieve a fair experiment / test.

(e) Draw a labelled scientific diagram showing the equipment set up required to carry out step 3 as described above. **3**

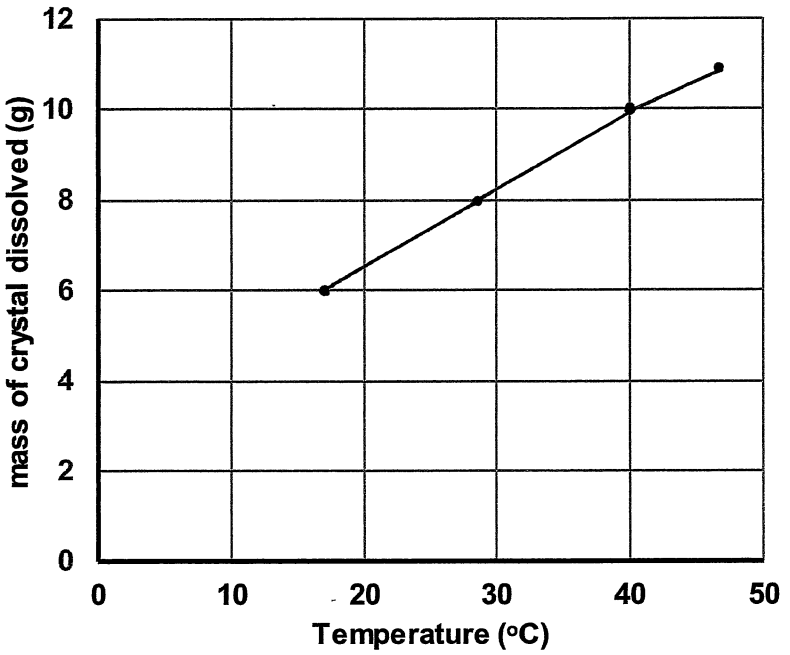


(f) Identify two safety issues the student will have to be concerned with through this experiment. **2**

1. The student should have worn safety glasses throughout the experiment, so that dangerous or hot substances dont go in the eyes.

2. The student should have had their hair tied back, especially while using the bunsen burner, so that their hair wouldn't catch on fire.

(g) Graph the students results on the axes provided. **3**



(h) Write a conclusion for the experiment. **1**

As the temperature of the water rised, more amounts of the crystal dissolved.

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Question 17 (4 marks)

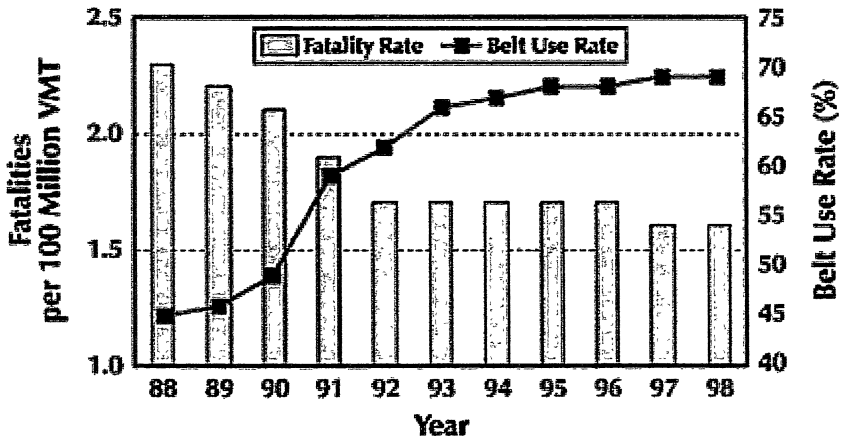
The following scientists are working in different branches or disciplines of science. Identify which branch each is working in:

4

Activity	**Branch of Science**
Paris is studying the crystals embedded in a rock.	
Beau is developing a new type of plastic	
Shaun is investigating the eating habits of insects	
Angus is monitoring the movement of an asteroid	Astronomy

Question 18. (4 marks).

The graph shows information about road fatalities and the use of seat belts in cars.



(a) According to this data what is the trend shown in the number of fatalities between 1988 and 1996? Provide data to support your answer. **2**

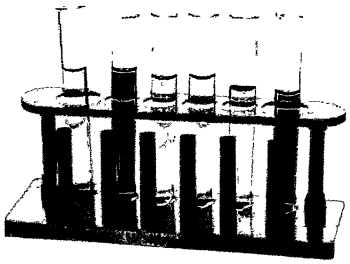
The number of fatalaties are more when the seatbelts are least worn.

(b) Analyse the data presented and provide reasons for the conclusion you made. **2**

Whenever less seatbelts are worn, e.g. in 1988 around 45 seatbelts were worn, an their were 88 deaths. But in 1998, around 70 seatbelts were worn and there were 55 deaths. Therefore, if more people ~~wit~~ wear seatbelts, their will be less deaths.

Question 19. (4 marks).

The drawing made by a scientist was twice as big as the real size of the object.
Determine the actual length of the whole piece of equipment. *Show your working.*
2



The actual length would be twise as smaller.

b) There are some problems with the equipment diagram above. Identify two things that the scientist needs to change to accurate represent the equipment above. 2

They are not labeled.

END OF EXAM