Class:
G O S F R (D)

Student Name: Aaav Chauhan

Part A /16	
Part B / 27	
TOTAL	/43

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 is to see whether heating up water more hotter makes more ~~more grams dissolve~~ dissolve than a less hotter temperature.

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

Temperature (°C)	Amount dissolved (g)
18	6.0
29	8.0
40	10.0
47	11.2

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

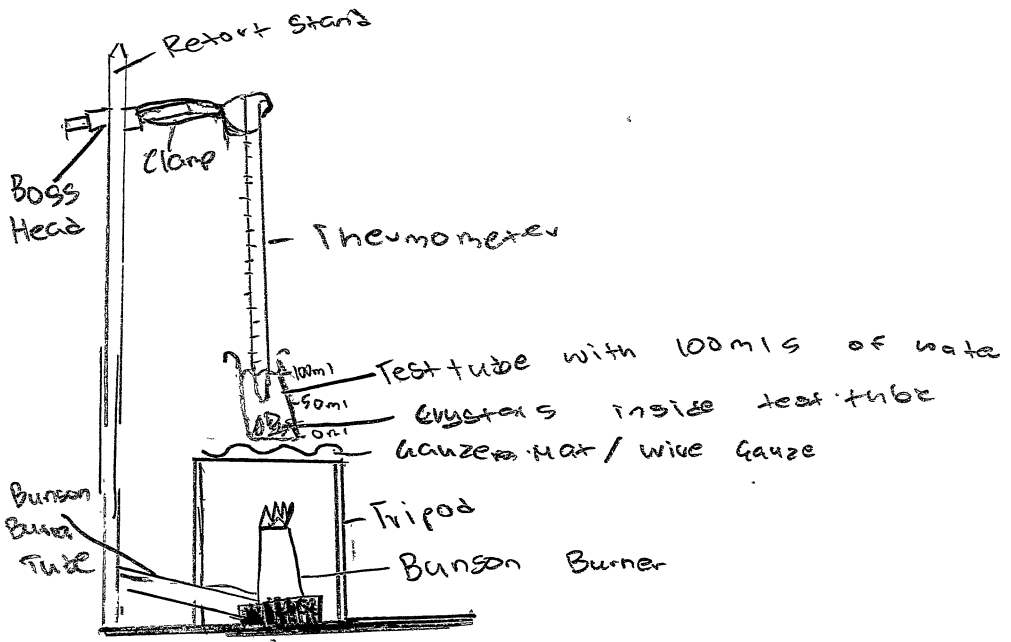
The independent vaviable is the temperature of the solution the dependent vaviable is the amount dissolved.

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

A variable that must be controlled is the water which must be 100 mls everytime you do this experiment

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

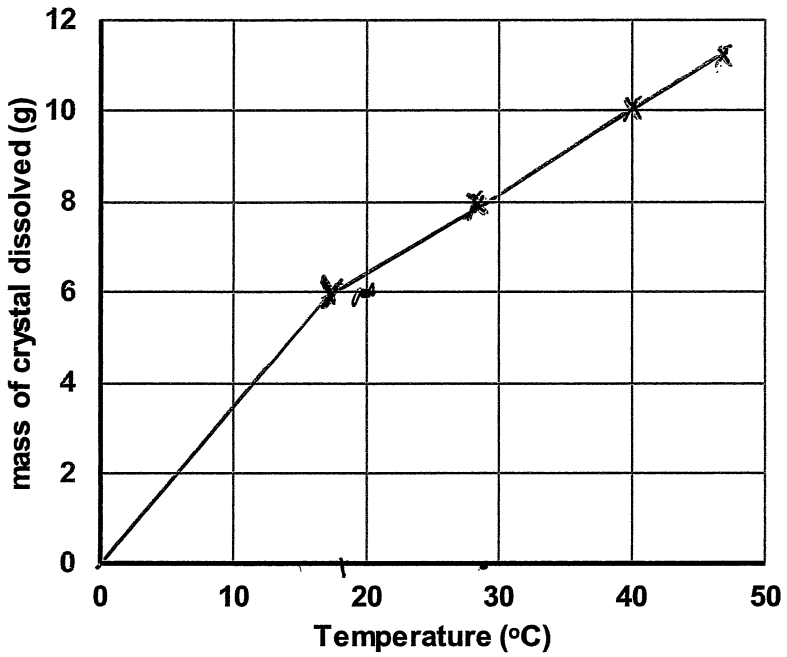
Diagram of step 3



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

~~Using~~ lighting the Bunson Burner the safe and correct way, ~~stirring~~ and stirring the solution.

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



(h) Write a conclusion for the experiment. 1

I can conclude that the hotter the temperature was, the more dissolves.

Question 17 (4 marks)

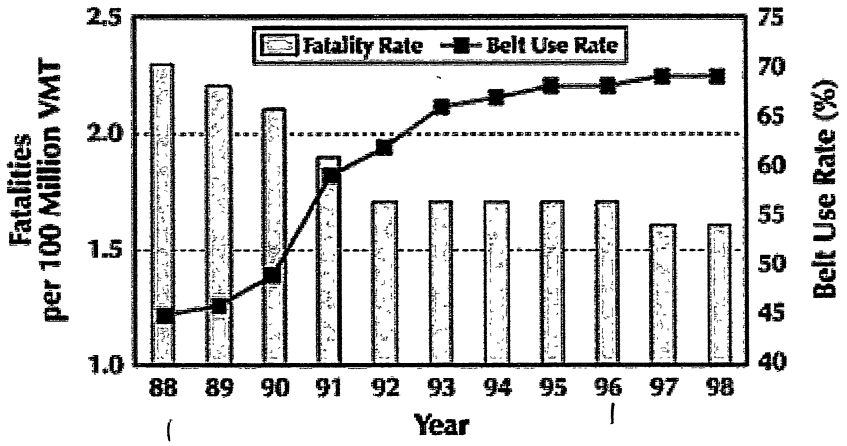
The following scientists are working in different branches or disciplines of science. Identify which branch each is working in:

4

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

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**

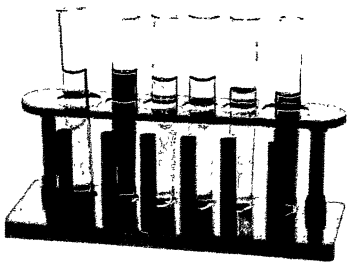
The trend seen from 1988 to 1996 can be said to go down with less fatalities each year until it reaches 1992 in which the number of fatalities stays the same till 1996.

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

I wrote what was written above due to the graph shown, which represents a downward trend of car fatalities until hitting the 1992 in which the number of fatalities stayed the ~~same~~ same for the next four years till 1996.

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 of the test tube rack should be around 2.25 cm.

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

The scientist did not ~~draw~~ draw the diagram in 2D but in 3D instead, and also did not label any of his equipment.

END OF EXAM