Class:
G O S F R (D)

Part A /16	
Part B / 27	
TOTAL	/43

Student Name:
Meehanth

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

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

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**

To find out if ~~will crystals dissolve faster with~~ more crystals dissolve if the water is hotter.

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

Temperture	crystals dissolved (weight)
18°c	6.0g
29°c	8.0g
40°c	10.0g
47°c	11.2g

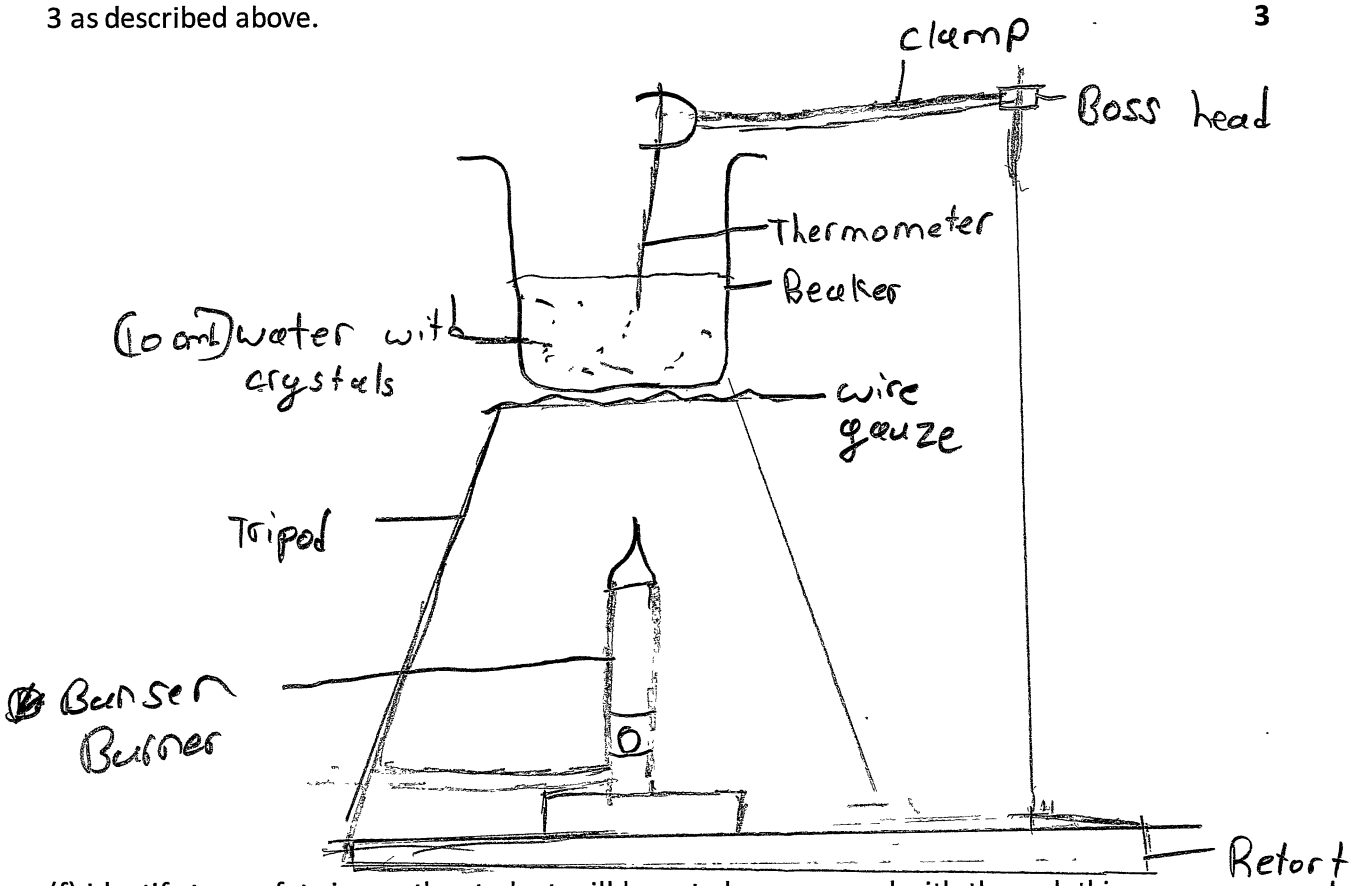
(c) Identify the independent and dependent variable for this experiment. **2**

The independent varible is the water and heat while the dependent is the crystals

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

The amount of crystals placed in the water

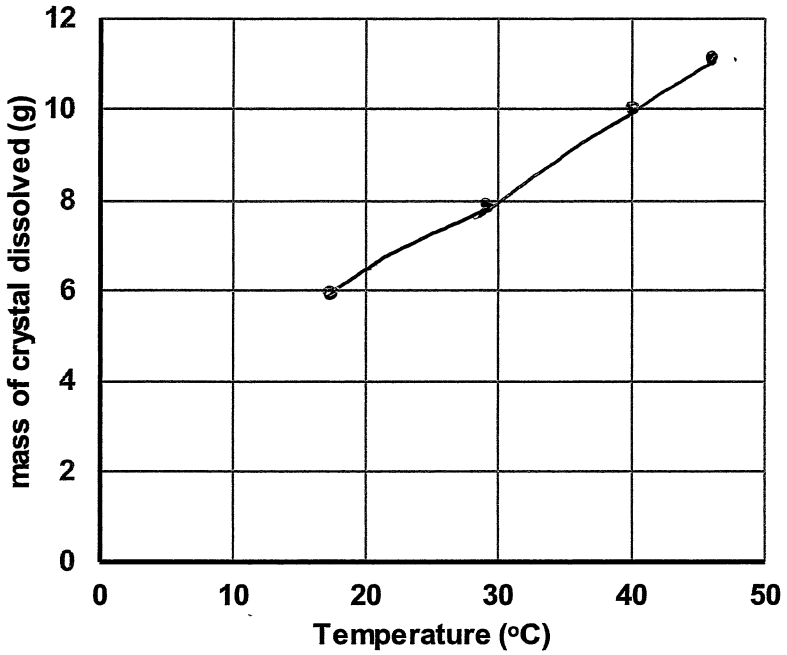
(e) Draw a labelled scientific diagram showing the equipment set up required to carry out step 3 as described above. **3**



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

~~1. Safety~~ The student will have to be concerned with wearing safety glass, tieing hair back and ensuring that the gas valve has no leaks

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



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

The hotter the water is the more crystals will be dissolved

Question 17 (4 marks)

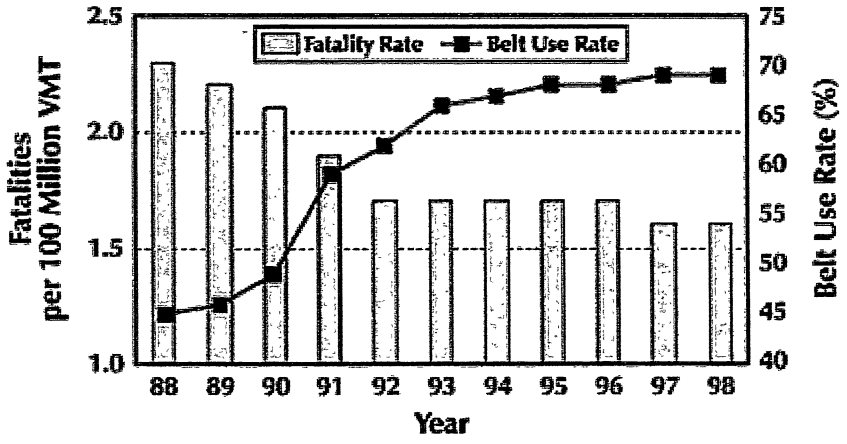
The following scientists are working in different branches or disciplines of science. Identify which branch each is working in:

4

Activity	**Branch of Science**
Paris is studying the crystals embedded in a rock.	Geology
Beau is developing a new type of plastic	Plastology ??
Shaun is investigating the eating habits of insects	insectology
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**

When more people wore seat belts the number of fatalities decreased

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

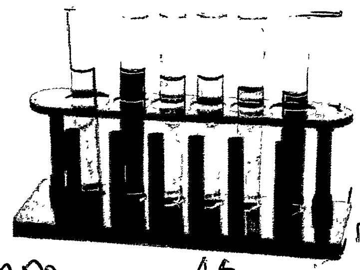
In 1988 only 45% of people driving cars wore a seatbelt and the fatality rate rose, but in 1998 70% of people wore a seatbelt resulting to the decrease of fatalities

30cm × 8cm × 12cm

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

30cm × 8cm × 12

44mm × 7mm × 31mm



1364mm

9548 mm³

~~4774mm3~~

47.74cm³

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

It need to be 2D and it has to be labelled

2880 cm²

END OF EXAM

4774mm ÷ 100

cm = ÷10

477.4cm ÷ 100

4.77cm³

477.4cm

47.74cm²