1 Working like a chemist

Circle the letter that correctly corresponds to each statement.

1 The symbol for the SI unit of time is

a) min **b)** s **c)** hr **d)** sec

2 How many significant figures are there in the number 760?

a) 1 **b)** 2 **c)** 3 **d)** 4

3 Which of the following is a qualitative change?

a) The mass changed from 13.95 g to 12.46 g.

b) The time taken for the experiment to finish was 29 s.

c) The colour of the reaction mixture changed from blue to red.

d) The volume of gas produced was 57 cm^3.

4 What do we mean when we refer to the mass of an object?

a) How hot it is.

b) The amount of space it takes up.

c) The amount of particles in it.

d) The distance from one point to another.

5 Identify the laboratory equipment shown in Fig 1.1.

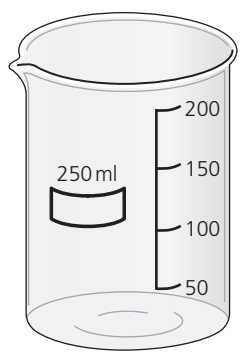


FIG 1.1

a) Beaker **b)** Test tube

c) Measuring cylinder **d)** Cylinder flask

6 The laboratory equipment identified in **Q5** may be used to measure:

a) Mass **b)** Depth **c)** Volume **d)** Area

7 The scientific notation for the prefix 'mega' is:

a) 10^3 **b)** 10^6 **c)** 10^{-6} **d)** 10^{-3}

8 The SI unit of temperature is represented as:

a) °C **b)** K **c)** °F **d)** C

9 Fig 1.2 shows part of a measuring cylinder. How much liquid is in the measuring cylinder?

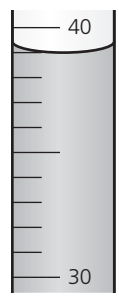


FIG 1.2

a) 40 cm^3 **b)** 39 cm^3 **c)** 41 cm^3 **d)** 30.9 cm^3

10 The scientific notation for the prefix 'milli' is:

a) 10^3 **b)** 10^6 **c)** 10^{-6} **d)** 10^{-3}

[Questions 1 to 10: 10 marks]

11 Complete the table below by filling in the blank sections.

Quantity	SI unit	Instrument used
		Balance
Volume		
	°C	

[6 marks]

12 Convert the following measurements to the unit indicated.

a) 35 cm = _____ m

b) 14 m = _____ km

c) 67 mm = _____ m

d) 20 cm = _____ km

[4 marks]

13 **a)** What is meant by the term 'physical quantity'?

_____

_____

[1 mark]

b) Identify THREE physical quantities and their SI unit of measurement.

i. _____

ii. _____

iii. _____

[6 marks]

14 State the equivalent measurements of the units given.

a) 1000 g = _____ kg

b) 1 m^3 = _____ dm^3

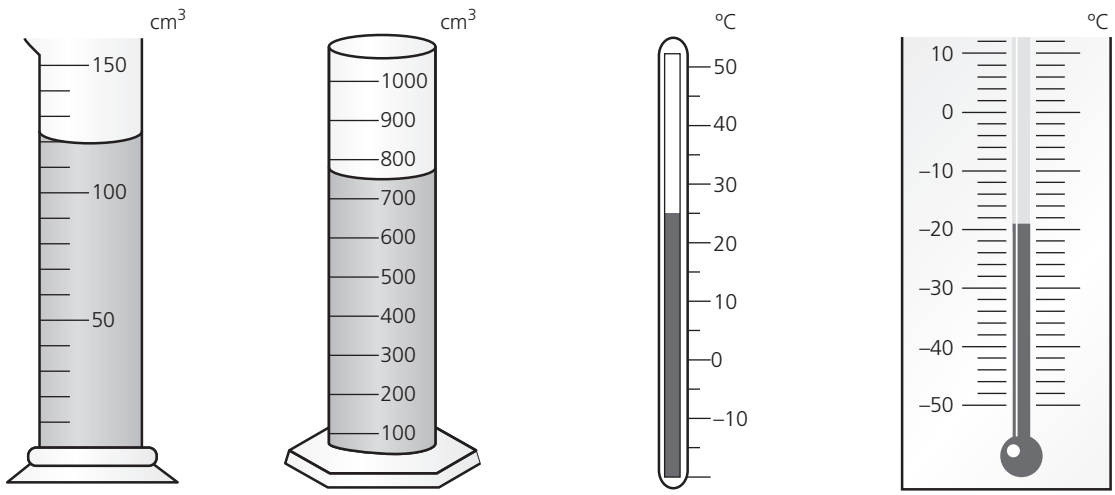
c) 37°C = _____ K

d) 1 dm^3 = _____ l

e) 1 mg = _____ g

[5 marks]

15 Your teacher asked you to examine the measuring cylinders and thermometers shown in Fig 1.3. Give your teacher the full and correct measurement on each instrument.



a) _____ **b)** _____ **c)** _____ **d)** _____

FIG 1.3

[4 marks]

16 Clearly define the following terms:

a) Volume _____

_____

b) Temperature _____

_____

[2 marks]

17 **a)** What is the difference between a qualitative observation and a quantitative observation?

_____

_____

_____

_____

[4 marks]