

PENANG SANGAM HIGH SCHOOL
YEAR 12 CHEMISTRY
SUPPLEMENTARY RESOURCES

Week 4 – Strand 1 General Chemistry

(Use your knowledge on systematic errors and metric conversion to answer question 1 and 2 respectively)

1. Systematic error affect the _____ but not the _____ of the measurement.
 - A. Exact numbers and inexact numbers
 - B. Accuracy and precision
 - C. Numerical values and significant figures
 - D. Precision and uncertainty

2. Which of the following is the correct exponential base unit for micro
 - A. 10^{-2}
 - B. 10^{-3}
 - C. 10^{-6}
 - D. 10^{-9}

3. A sample of liquid has a measured volume of 35.13 mL. assume that the measurement was recorded properly. **(Hint: use knowledge on significant figures and one tenth rule to answer this question)**
 - i. Determine the number of significant figures in the measured volume.

 - ii. Assume that the volume measurement was made with a graduated cylinder. How far apart were the scale divisions on the measuring cylinder.

4. The density of sugar is 1.59 g/mL. What is the mass in kg of 3L of sugar? **(Hint: this is an application question, use the conversion table in dimensional analysis)**

5. Convert the following: **(Hint: use the conversion table in dimensional analysis)**

i) 9g/L to g/mL

ii) 20 ml to dm^3

6. The table given below is partially filled. Complete the table by writing the missing information. **(Refer to the notes on metric conversion)**

Prefix	Symbol	Exponential base units
Giga	i	10^9
ii	m	iii
Micro	iv	10^{-6}

i. _____

iii _____

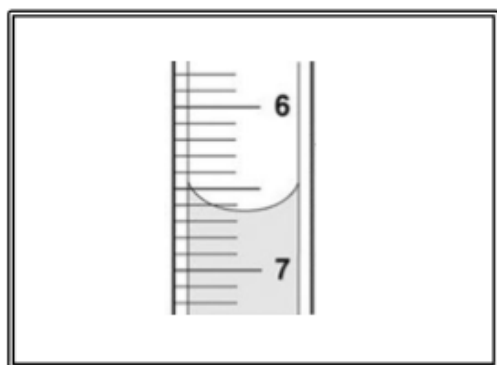
ii _____

iv _____

7. Given below are two important rules often used to write uncertainties in measurements.

Rule 1 The uncertainty must be to the same decimal place value as the measured value.
Rule 2 The measured value should be evenly divisible by the uncertainty.

Using the rules above write the measured volume (in mL) and the uncertainty for the burette reading shown below. **(Read the examples on uncertainties in measurements in notes and answer the question given below)**



Measurement: _____

