Name _____

GCSE to A Level
Transition Test

1.1 Explain why cell are often stained before being viewed with a light microscope. **[2]**

_____

_____

1.2 Microscopes can be used to measure the size of a cell.

Name the equipment that has an accurate scale in micrometres engraved on it.

Circle **one** answer. **[1]**

A eyepiece graticule **B** eyepiece lens

C objective lens **D** stage micrometer

1.3 Define resolution. **[1]**

_____

2.1 Match these measurement terms to their definitions. **[2]**

precise	result is close to true vale
reproducible	value in a set of results is ruled out as erroneous
anomaly	measurements are close to a mean value
accurate	original experimenter gets the same results if they do it again
repeatable	another person gets the same results

2.2 Which type of error occurs due to unpredictable variation around the true value?

Circle **one** answer. **[1]**

A measurement error **B** random error

C systematic error **D** zero error

Name _____

2.3 Which type of error occurs due to using a balance that reads 0.03 g when nothing is sitting on it?

Circle **one** answer. **[1]**

A measurement error **B** random error

C systematic error **D** zero error

3.1 Name the site where ribosomes are produced.

Tick **one** box. **[1]**

A lysosomes **B** mitochondria

C nucleolus **D** vesicles

3.2 Name the site where waste material is broken down.

Tick **one** box. **[1]**

A lysosomes **B** mitochondria

C nucleolus **D** vesicles

3.3 Compare the functions of the two types of endoplasmic reticulum. **[3]**

_____

_____

_____

3.4 Name two types of extension that protrude from some cells **[2]**

_____

_____

Name _____

4.1 Complete the table below. **[2]**

prefix	index
micro	
	10^{-3}
centi	
	10^{-9}
kilo	

4.2 The mass of an object measured on a 4 decimal place balance is 7.0855 g

What is this mass to 3 significant figures? **[1]**

A 7.09 g **B** 7.19 g

C 7.085 g **D** 7.086 g

5.1 A student measures the actual width of a cell. The cell was 0.006 mm.

Express this value in metres using standard form. **[1]**

answer = _____ m

5.2 Convert this value to µm.

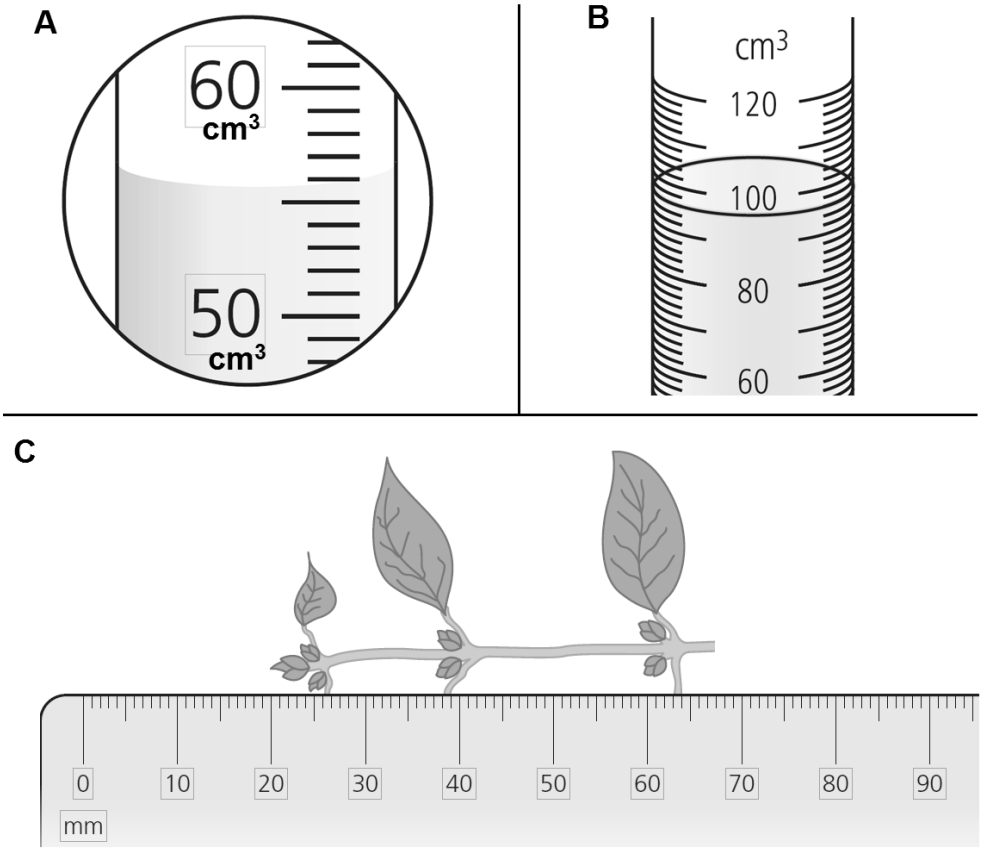
answer = _____ µm

5.3 The size of the image seen was 2.4 mm. Calculate the magnification used. **[2]**

magnification = _____

Name _____

6.1 For the following images give the measurements and measurement uncertainties. **[6]**



A _____ **cm³**

B _____ **cm³**

C _____ **mm**

6.2 For each of the examples (**A**–**C**) above, calculate the relative error. **[3]**

A _____ **cm³**

B _____ **cm³**

C _____ **mm**

Total = 30 marks