

Summer transition work

Please complete all work set on these pages for handing in first lesson Y12.

What is the unit of measure for the following base SI units

Length

Mass

Time

Electric current

Temperature

Luminous intensity

Amount of substance

State the definitions of measurement and terms related to measurement for the following terms

Accuracy

Accuracy class

Absolute error

Calibration

Correction

Error

Intrinsic error

Percentage error

Precision

Relative error

True value and uncertainty

Please state the formulae for following terminologies

- relative error
- absolute error
- absolute correction
- relative correction

Answer **all** questions.

- 1 (a) Assign the appropriate power of ten to the following prefixes.

μ (micro)	
M (mega)	
k (kilo)	
m (milli)	

[4]

- (b) In an electronics circuit a voltmeter is indicating a value of 11.7 V when the true value is known to be 12 V.

Determine:

- (i) the absolute correction

.....
 [2]

- (ii) the relative correction.

.....
 [2]

- 1 (a) The table below refers to the International System of units (SI units).

Complete the table.

The first row has been completed for you.

Quantity	Unit
Length	metre
Mass	
	henry
	kelvin
Time	

[4]

- 4 (a) Fig. 4 shows a stress-strain curve for a metal.

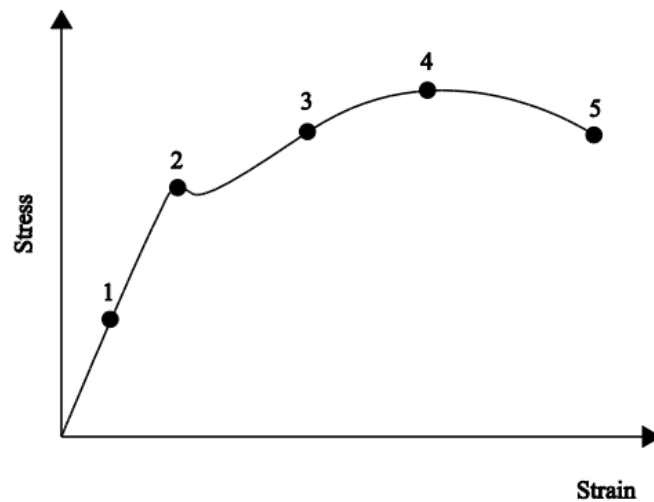


Fig. 4

Complete the table to show which point (1, 2, 3, 4 or 5) represents the features of the stress-strain graph.

Feature	Point number
Ultimate Tensile Stress (UTS)	
Yield Stress	
Fracture Point	
Elastic deformation	

[4]

- 5 (a) Define 'viscosity' of a fluid.

.....
 [1]

- (b) Fluid flow is described as being either laminar or turbulent.

Explain the difference in the behaviour of particles in laminar and turbulent flow.

.....

 [2]