

FBQ1: Systematic error can be eliminated to an \_\_\_\_.

Answer: \*extent\*

FBQ2: In an experiment to determine the acceleration due to gravity of a simple pendulum, the measurements needed from the instrument are length of the thread and \_\_\_\_ of oscillation of the pendulum bob

Answer: \*time\*

FBQ3: The S.I unit of acceleration due to gravity,  $g$  is \_\_\_\_.

Answer:  $\text{ms}^{-2}$ \*

FBQ4: The error due to wear and tear of a particular instrument is called \_\_\_\_.

Answer: \*Back lash error\*

FBQ5: Error not due to instrumental problem is \_\_\_\_.

Answer: \*Observational error\*

FBQ6: \_\_\_\_ causes like parallax in reading a voltmeter scale.

Answer: \*Faulty observation\*

FBQ7: A plotted graph showing a straight line through the origin indicates that the two plotted variables are \_\_\_\_ to each other

Answer: \*directly proportional\*

FBQ8: To record the observations during an experiment the measured values would be recorded to at least \_\_\_\_ decimal places

Answer: \*two\*

FBQ9: If  $y$  is plotted on the vertical axis and  $x$  on the horizontal axis in equation  $y = mx$ , the slope is  $m$  which is the \_\_\_\_ value.

Answer: \*constant\*

FBQ10: \_\_\_\_ are due to causes which can be identified.

Answer: \*Systematic error\*

FBQ11: In the equation  $y = mx + b$ ,  $m$  and  $b$  are \_\_\_\_.

Answer: \*constants\*

FBQ12: When independent measurements are multiplied or divided the \_\_\_\_ in error in the result is the square root of the sum of squares of fractional errors in individual quantities.

Answer: \*fractional error\*

FBQ13: The following values 32, 30, 28, 26 have two significant digits except \_\_\_\_.

Answer: \*30\*

FBQ14: In recording the observations in an experiment, the calculated values like reciprocal, square, sine of values would be recorded to at least \_\_\_\_ decimal places

Answer: \*three\*

FBQ15: The error in the result is found by determining how much change occurs in the result when the maximum error occurs in the \_\_\_\_.

Answer: \*Data\*

FBQ16: Data collected can be used to show \_\_\_\_ between two physical quantities through graphs.

Answer: \*relationship\*

FBQ17: Which type of motion is executed by a simple pendulum bob?

Answer: \*simple harmonic motion\*

FBQ18: \_\_\_\_ is defined as when an object moves to and fro in such a way that its acceleration is directly proportional to its displacement and is always directed to its equilibrium position.

Answer: \*simple harmonic motion\*

FBQ19: Materials that can regain their original shape after the deformation (change in dimensions) are called \_\_\_\_.

Answer: \*Elastic materials\*

FBQ20: An \_\_\_\_ is said to perform simple harmonic motion if it moves to and fro in such a way that its acceleration is directly proportional to its displacement and is always directed to its equilibrium position

Answer: \*object\*

FBQ21: A measurement possessing greater number of significant digits has \_\_\_\_ accuracy

Answer: \*Greater\*

FBQ22: At \_\_\_\_ position of Simple Harmonic Motion (SHM) the displacement of the body is zero.

Answer: \*Equilibrium\*

FBQ23: What is the unit of the specific latent heat of fusion of ice?

Answer: \*Jkg<sup>-1</sup>\*

FBQ24: If a simple pendulum of mass was displaced such that the bob made 20 oscillations in 45.70 seconds. Calculate the period T of oscillation in second.

Answer: \*2.29\*

FBQ25: The period of oscillation is the time taken for the body to make \_\_\_\_ complete oscillation

Answer: \*one\*

FBQ26: When a mass is hung on a spring stretches 6 cm, its period of vibration if it is then pulled down a little is \_\_\_\_.

Answer: \*0.5s\*

FBQ27: A mass (m) is hung at the end of a spiral spring of force constant of 200N/m. If the spring oscillates with a period of 0.45 s when set in motion, the value of its mass is \_\_\_\_.

Answer: \*1kg\*

FBQ28: \_\_\_\_ can be defined as the ratio of the mass of water to the mass of an equal volume of water.

Answer: \*Relative density\*

FBQ29: Relative density bottle is also called \_\_\_\_ gravity bottle.

Answer: \*specific\*

FBQ30: If two values have equal unit of measurement, they are therefore said to be \_\_\_\_ Equally \_\_\_\_.

Answer: \*precise\*

FBQ31: Glass is an example of \_\_\_\_ material

Answer: \*Brittle\*

FBQ32: The relationship between any two physical quantities can be determined through the use of \_\_\_\_.

Answer: \*graph\*

FBQ33: Whose law is this 'the force on an elastic material is directly proportional to the extension produced provided that the elastic limit is not exceeded'

Answer: \*Hooke\*

FBQ34: If the graph of force  $F$  is plotted against the extension  $e$ , we shall obtain a \_\_\_\_ graph showing that Hooke's law is obeyed.

Answer: \*linear\*

FBQ35: A mass of 40kg hung on an elastic spring of length 37.2cm extends to 42.0cm. The force constant of the spring take  $g$  as  $10\text{ms}^{-2}$  is \_\_\_\_.

Answer: \*83.33  $\text{Nm}^{-1}$ \*

Multiple Choice Questions (MCQs):

MCQ1: Which of the following measurement done with meter rule is more precise?

Answer: 17.9 cm

MCQ2: Relative error is \_\_\_\_

Answer: the difference between possible error and the total measurement

MCQ3: The two types of variables that can be measured are \_\_\_\_.

Answer: X and Y variables

MCQ4: If two values have equal unit of measurement, they are therefore said to be \_\_\_\_

Answer: equally precise

MCQ5: The value of acceleration due to gravity depends on one of these:

Answer: velocity

MCQ6: The period of the body performing simple harmonic motion is 2s. If the amplitude of the motion is 3.5 cm, calculate the maximum speed ( $\pi=22/7$ ).

Answer: 20.4 cm/s

MCQ7: Which of the following is the best equation of a non-linear graph?

Answer:  $y=ax+bx$

MCQ8: If the graph produced is a straight line, then the relationship is described as \_\_\_\_

Answer: Linear

MCQ9: Graphs showing how two physical measurements are related can be represented in which form?

Answer: Variable

MCQ10: If  $y=mx + b$ , and  $y$  is plotted against  $x$ ; what type of graph will be obtained?

Answer: horizontal graph

MCQ11: Relative error can be defined as \_\_\_\_

Answer: product of the possible error to the total measurement

MCQ12: A measurement possessing greater number of significant digits has \_\_\_\_

Answer: less relative accuracy

MCQ13: The time taken for a given event is 7.4s and the possible error is 0.05cm, what is the relative error?

Answer: 0.003

MCQ14: Consider the following pair of measurements 40.0cm or 8.0cm. Which one is more accurate?

Answer: 8.0cm

MCQ15: the following physical quantities are fundamental quantities except

Answer: Density

MCQ16: Which of the following is correct about types of graph?

Answer: linear graph

MCQ17: Multiplication and division rule states that the product or quotient of two measurements should be rounded off \_\_\_\_

Answer: to contain less significant digits as the measurement having fewer numbers of significant digits

MCQ18: In measurement report, the non-zero digits are \_\_\_\_

Answer: not significance

MCQ19: If  $x$  is equal to 1 in the equation  $y = mx$ , what will be the value of  $y$ ?

Answer:  $y = 0$

MCQ20: consider the equation  $T = 2\pi\sqrt{l/g}$  if  $T$  is plotted against  $\pi$ , the graph obtains will be \_\_\_\_

Answer: linear graph

MCQ21: Which of these statements about measurement is correct?

Answer: All measurements are not exact

MCQ22: Multiply the following figures: 5.2865, 3.8 and 19.62 and round off the result to more accurate value

Answer: 394.14

MCQ23: Divide 9.5362 by 3.2 round off the result to more accurate value

Answer: 3.21

MCQ24: Scientific measurements are expressed by using \_\_\_\_

Answer: rules

MCQ25: The major errors in measuring instrument are

Answer: zero error

MCQ26: Human errors are based on;

Answer: judgement and precision

MCQ27: The possible error in measurement is due to

Answer: imprecision in measuring devices

MCQ28: Precision is a function of \_\_\_\_

Answer: relative error only

MCQ29: The temperature of two places are recorded to be 30.56°C and 32.22°C we can say that they are \_\_\_\_

Answer: equally precise

MCQ30: A digit is significant if and only if \_\_\_\_

Answer: it affects the possible error

MCQ31: Which of the following pair of quantities have identical S I unit? I . Force and surface tension II. Surface tension and spring constant III. Torque and spring constant IV. Young's modulus and pressure

Answer: II only

MCQ32: The inverse of the slope of graph of extension against tension in the spring represents \_\_\_\_.

Answer: reciprocal of the spring constant

MCQ33: If  $m$  and  $b$  are constants in the graph of  $y = mx + b$ . The value of the constant  $b$  represents \_\_\_\_.

Answer: intercept on the graph

MCQ34: The following are sources of error in a measuring instrument except \_\_\_\_

Answer: they arise due to changes in environment

MCQ35: One of the following is not a systematic error.  
Answer: errors in judgement of an observer