

MCQ1: In a simple pendulum experiment, 20 oscillations were completed in 50s. Calculate the period of the pendulum.  
Answer: 0.02s

MCQ2: A body of mass 2 kg moves in a circular path with a uniform speed of 10 m/s. If the radius of the path is 5m, calculate the magnitude of the centripetal force action on the body.  
Answer: 40N

MCQ3: Which of the apparatus is not needed for the determination of acceleration due to gravity  $g$ ?  
Answer: Density bottle

MCQ4: A simple bob executing simple harmonic motion has 2cm and 12Hz as amplitude and frequency respectively. Calculate the period of the motion.  
Answer: 0.083s

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

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: 11cm/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: Pictorially

MCQ10: If  $y=mx + b$ , and  $y$  is plotted against  $x$ ; what type of graph will be obtained?  
Answer: Linear graph not passing through the origin

MCQ11: Relative error can be defined as\_\_\_\_  
Answer: Ratio of the possible error to the total measurement

MCQ12: What is the relative error, if the possible error is 0.05cm and measurement is 32cm?  
Answer: 0.02

MCQ13: The time taken for a given event is 7.4s and the possible error is 0.05cm, what is the relative error?  
Answer: 0.007

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

more accurate?

Answer: 40.0cm

MCQ15: Consider the following pair of measurements: 0.45m or 0.04m. Which one is more accurate?

Answer: 0.45m

MCQ16: If the diameter of hydrogen atom is 0.000000000106 meters. what is the scientific notation ?

Answer:  $1.06 \times 10^{-10}$

MCQ17: The mass of a water molecule is 0.00000000000000000000003g. Express in scientific notation.

Answer:  $3 \times 10^{-23}$

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

Answer: Significant

MCQ19: A digit is significant if and only if it affects \_\_\_\_.

Answer: The relative error

MCQ20: Multiply 1.23 by 2.3. Round off the result to more accurate measurement

Answer: 2.8

MCQ21: Divide 2.1 by 1.54. Round off the result to more accurate measurement.

Answer: 1.4

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

Answer:  $3.9 \times 10$

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

Answer: 3

MCQ24: Straight line graph show that:

Answer: The relationship between the two variable are linear

MCQ25: The major errors in measuring instrument are

Answer: All of the options

MCQ26: Human errors are based on;

Answer: Judgement and perception

MCQ27: The possible error in measurement is due to

Answer: Inherent imprecision in measuring devices

MCQ28: A measurement reported to one hundredth of a centimetre, such as 4.23cm, we can say;

Answer: It is less precise than 4.2cm

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: The variables in the function  $y = Ae^{-kx}$  are  $x$  and  $y$ . A negative slope will be obtained if a graph of

Answer:  $\ln y$  is plotted against  $x$

MCQ31: Which of the following pair of quantities have identical SI 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: Spring constant

MCQ33: Specific latent heat of fusion of a substance is the quantity of heat required to

Answer: Change the state of unit mass of the substance at its melting point

MCQ34: A piece of copper weighing 400g is heated to 100°C and then quickly transferred into a copper calorimeter of mass 10g containing oil of unknown specific heat capacity at 30°C. If the final temperature of the mixture is 50°C and the specific heat capacity of copper is  $390 \text{ J kg}^{-1} \text{ K}^{-1}$  The heat gained by calorimeter is:

Answer: 78J

MCQ35: A piece of copper weighing 400g is heated to 100°C and then quickly transferred into a copper calorimeter of mass 10g containing oil of unknown specific heat capacity at 30°C. If the final temperature of the mixture is 50°C and the specific heat capacity of copper is  $390 \text{ J kg}^{-1} \text{ K}^{-1}$ , calculate the specific heat capacity of the oil.

Answer:  $386.1 \text{ J kg}^{-1} \text{ K}^{-1}$

FBQ1: Let the measured value of two widths be  $W$ . The error in the quantity  $W = W_1 + W_2$  will be \_\_\_\_

Answer: 0.014m

FBQ2: \_\_\_\_ is also known as determinant errors.

Answer: Systematic error

FBQ3: In an experiment involving vernier calipers, what kind of error is experienced when the jaws are in contact, the zero of the vernier did not coincide with the zero of the main scale?

Answer: Zero error

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: The type of graph equation obeyed if  $T^2$  was plotted against  $M$  of the equation,

Answer:  $y = ax + b$

FBQ8: There are \_\_\_\_\_ different types of graphs in this course.

Answer: 4

FBQ9: If  $W$  and  $V$  are related by equation,  $W = GVZ$  is reduced to a linear one,  $Z$  represents \_\_\_\_\_.

Answer: slope

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

Answer: Systematic error

FBQ11: What is the unit of Mass?

Answer: Kilogram

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: Determination of acceleration due to gravitation using simple pendulum is independent of the bob's \_\_\_\_\_.

Answer: mass

FBQ14: The fractional error in the quantity \_\_\_\_\_ is given by  $n$  times the fractional error in  $B$ .

Answer:  $B^n$

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: When  $\theta$  is very small in simple harmonic motion then  $\sin \theta = \theta$  in rad, acceleration,  $a$  is proportional to\_\_\_\_\_.

Answer: displacement

FBQ21: Holding relative density bottle with a moisture hand results to \_\_\_\_\_

Answer: expansion

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: At equilibrium position of Simple Harmonic Motion (SHM) the speed of the body is\_\_\_\_\_.

Answer: Maximum

FBQ25: The dimensional unit of time is\_\_\_\_\_

Answer: T

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 \_\_\_\_\_.

Answer: specific gravity bottle

FBQ30: The dimensional unit of distance is \_\_\_\_\_

Answer: L

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

Answer: Brittle

FBQ32: \_\_\_\_\_ states that the deformation of a material is proportional to the applied

force in the elastic limit.

Answer: Hooke's law

FBQ33: When a material cannot recover its original shape, it is said to undergo \_\_\_\_.

Answer: plastic deformation

FBQ34: \_\_\_\_ is a property that makes the surface of liquid to behave as if it is covered with an elastic skin.

Answer: surface tension

FBQ35: When you are taking reading from stop watch, you avoid error due to \_\_\_\_.

Answer: parallax

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