CALCULUS EDUCATIONAL CONSULTS

MOTTO: BRINGING KNOWLEDGE TO YOUR DOORSTEP
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MAINLAND LECTURE CENTER

PHY191: INTRODUCTORY PRACTICAL PHYSICS I

Relative error is the ratio of possible error to the total measurement

The systematic errors are also called _____
determinant errors

when measuring a physical quantity there may be an error due to wear and tear in the instruments like screw gauge or spherometer due to defective fittings. Such an error is called **back lash error**

random errors has several possible sources which are_____
Observational
Environmental

The motion of a simple pendulum is described as being a **simple harmonic motion**

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, then, that object is said to perform a **simple harmonic motion.**

Hooke's law states that, the force on an elastic material is directly proportional to the extension produced by the force provided the elastic limit is not exceeded

relative density of the liquid is defined as the ratio of the mass of the liquid over the mass of an equal volume of water.

if F = ma mg sin Θ and $ a = -g sin Θwhat does the negative sign indicate?
Acceleration does not increase perpetually

The simple pendulum has its equilibrium position at the_____.
Center

When ploting a graph what do we consider first ?
A brief title at the top

we can better visualise the functional relationship between two physical quantities by _____
Plotting a graph between them

Given distance S = 0.63 ± 0.02 m and time T = 0.63 ± 0.02 m obtain fractional error in velocity V ?
0.37 ± 0.02 ms-1

In most of the physics experiments our objective is to determine_____.
Relationship between physical quantities

When is a digit said to be significant
When it affect the relative error

When measuring intersteller distances, we use_____, numbers
Very small

While measuring interatomic distances, we use_____,` numbers
Very large

_____is define as the ratio of possible error to the total measurement.
Relative error

A measurement of 5.32 cm and 5.3 cm, which is more precise ?
5.32 cm

the instruments having smaller units of measure will give more_____.
Precise measurement

The_____is thus due to inherent imprecision in measuring devices.
Possible error

the_____nature of measurement let us reflect on the process of measurement of length.
Inexact

One of the following is a cause of error in experimental measurement
introduction of air
using wrong measuring device
Faulty component
non of the above

The negative sign in hooks law signifies _____
Restoring force

How does a spiral spring behave like an elastic material?
Subjecting under force

_____is allowed to dangle freely on the working bench in specific gravity experiment.
The pendulum bulb

Pour out the_____and clean it again with the_____and dry
Kerosene, Methylated spirit

Weigh the_____,_____and the_____all together
Bottle, stopper and the kerosene

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Fill the bottle with_____whose relative density is to be determined
Kerosene

Weigh the bottle and stopper empty by using the_____and record this mass as m1.
Weighing balance

Clean the bottle and stopper with_____and dry it by using a hot air drier.
Methylated spirit

_____helps to achieve Q77 above?
Special stoper on the bottle

The volumes of the liquid and the water are made to be equal by using the_____.
Specific gravity bottle

_____is defined as the ratio of the mass of the liquid over the mass of an equal volume of water?
Relative density

which of the following is not a source of random error ?
Observational
Environmental
A and B
All of the above

The relative density of a liquid is defined as _____
Density of the liquid/Density of water

State one material needed for the Determination of relative density of kerosene using the specific gravity bottle.
Balance and weights

What can we obtain by plotting the graph of SinΘ on vertical axis against CosΘ on the horizontal axis,
Coeficient of static friction

Attaching different weights on the wooden block can _____the wooden block.
Vary the normal reaction of

the coefficient of friction p, is the coefficient of friction p, is defined as_____.
μ = Tan Θ

The normal reaction R on the inclined plane is_____.
WCosΘ

The limiting frictional force (Fr) is equal to_____.
WSinΘ

The_____, which enables the wooden block just to glide, is then noted.

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Angle Θ

By gradually raising the upper board_____is made between the upper and lower boards.
An angle Θ

On top of the upper board is placed a_____.
Wooden block

The inclined plane is made up of_____hinged at one end.
Two wooden boards

what is the other way to determine the coefficient of static friction?
Use of an inclined plane.

In an experiment to determine the surface tension of water by rise in a capillary tube, one of the following is a proceedure to follow.
Fill the beaker with water to the brim

_____and_____are the clearing fluids required for the Determinationof surface tension of water by rise in a capillary tube.
Nitric acid and caustic soda solution

Which of the apparatus is not needed for the determination of acceleration due to gravity by means of simple pendulum from inaccessible height.
Meter rule

A hook on the ceiling of the room or laboratory Stop watch
Retort stand and clamp

which of the following is the equation of the restoring force.
F = mg sin Θ
F = mg cos Θ
F = mg tan Θ
non of the above

Which of the apparatus is not needed for the determination of acceleration due to gravity g. Small pendulum bob
Split cork
Stop watch
All of the above

Determine the error of sine of 90°, when the error in the angle is 0.5°.
Zero.

Compute the error in the sine of 30° ± 0.5°.
± 0.008.

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Find the error propagation in the following length L1 = 1.746 ± 0.010 m & L2 = 1.507 ± 0.010 m
0.014 m

what is precision index of the values in question (33) above
0.376 cm

What is the average value of the following length 11=135.0cm,/2=136.5cm,13=134.0 cm, /4=134.5 cm
135.0 cm

The following are types of systematic error except _____
Random error
zero error Back
lash Error End
Correction

Which of the following is a type of error
Random error
zero error
defect calibration
faulty observation

what is the least count of a screw gauge?
1mm

what is the least count of a vernier caliper?
0.1mm

what is the least count of a meter scale?
1mm

Scientific measurements are usually expressed by using _____
Scientific notations.

subtract 2.11 from 2.1546
-0.04

Divide 9.5362 by 3.2
3

Multiply 2.3 by 1.23
2.8

Write this in scientific notation 0.00000000000000000000003g
3 x 10-23 g

From relative error, which of the following is more accurate
40.0 cm

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Which of the following measured values are more precise
$$20.56^ {o}C $$
$$32.22 ^{o}C$$
$$20.6{^o}C$$
A &B

Which of the following measured values are more precise.
19.87 cm

what possible could occur when measuring the length of a substance
Error due to paralax

What kind of error occure due to faulty measuring instrument.
Zero error

Why are experimental result inexact
Due to error

What determine the values of an experimental data/result
Quality of measuring instruments.

When carrying out scientific experiment the values are recorded as _____
Approximate values

Non-linear equation are inform of _____
Auadratic

Which of the equations discribed the graph passing the origin.
y=mx+b

The equation that relate anwser to question one above is _____
y=mx+b

If the graph produced is a straight line, then the relationship is described as _____
linear

Graphs are_____ways of showing how two physical measurements are related.
Pictorial

The following are examples of a non-linear graphs except
Displacement-time
velocity-time
Newton's cooling curves
All of the above

Which of the following is the best equation of a non-linear graph
y=mx+b

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y=ax+bx
y=mx-b
$$y=m(x+b)$$

Which of the following is the best equation of a linear graph
y=mx+b
$$y=ax+bx$$
$$ y=mx-b$$
$$ y=m(x+b)$$

The following are types of graphs except
linear graph passing the origin
reducing non-linear equation to non equation non
linear graph passing the origin
Non of the above

How do we determine the relationship between two variables
Graph

The following is an example of fundamental quantities except _____
Force
mass
length
time

The Physics Practical is to enable us determine some physical constants except _____
acceleration due to gravity
specific heat capacity
force constant of a spiral spring
All of the above

What is another name for determinant error?
Systematic Error

The equation $y $ = $mx + b$ for a graph of y versus x indicates
Linear graph

Where will thelinear graph of T^2 against l gives pass through?
Origin

Which error is responsible for wear and tear of instrumment?
Backlash Error

Which of these two measured values; 56.42cm and 80.0cm is more precise?
56.42cm

Relative error is the ratio of possible error to the_____measurement
Total

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Which of these two measured values; 60.0g and 5.0g is more accurate?
60.0g

Express 0.0000009km in scientific notation
9 x 10^{-7}km

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 centripetal force action on the body.
40N

In the Hookeâ€™s law experiment, the elastic constant obtained stands for
Elastic limit

In an experiment for effective mass determination of a spiral spring and spring constant, acceleration (a) is square of the angular speed isproportional to the displacement(x) the expression square of the angular speed is
\frac{2\pi}{T}

What would be the intercept of the graph in a simple pendulum experiment when $ T^{2}$ is plotted against h is
None of the options

When ploting graph the following condiction is considered except_____.
All of the above

The dimension of spring constant is identical to that of
Surface tension

Effective mass of a spiral spring is determined by
Intercept on the x- axis

A body weighs 160N in air and 120N when wholly immersed in a liquid of relative density 0.8. The relative density value of the body is (g=10ms-2)
3.2

A body of mass 20g appears to have a mas of 13g in oil and 12g in water.What is the relative density of oil?
0.88

A substance of density 4g/cm3 causes 60g of turpentine of density 0.8g/cm3 to overflow from a displacement vessel. What is the mass of the substance?
300g

A body of mass 2kg and volume 5x10-4m3 is hanging from a balance graduated in Newtonâ€™s. What would the balance read when the body is in air and when fully immersed in paraffin of density 800kg/m3?
16N

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The maximum force of friction that must be overcome before the motion between the surfaces begins is
Solid friction

Which of these pairs of measurements is precise?
18.7 cm or 17.87 cm

The relative error of the measurement of length 65.4 cm of possible error of 0.05 cm when the unit of measurement is 0.1 cm is
0.0008 cm

What is the intercept of the equation; W = XY - Z, when Z is plotted against X?
Y

A box of mass 1 kg rests on a frictionless inclined plane which is at an angle of 30^{o} to the horizontal plane. Find the constant force that needs to be applied parallel to the incline to move the box up the incline with an acceleration of 1m/s^2.
5.9N

A box of mass 1 kg rests on a frictionless inclined plane which is at an angle of 30â—¦ to the horizontal plane. Find the constant force that needs to be applied parallel to the incline to move the box down the incline with an acceleration of 1m/s^2.
â^'3.9N

A block slides with constant velocity down an inclined plane that has slope with angle $\ theta$ = 30 ^{o}.Find the coefficient of kinetic friction between the block and the plane.
0.577

A block slides with constant velocity down an inclined plane that has slope with angle $\ theta$ = 30 ^{o}. If the block is projected up the same plane with initial speed of2.5m/s, how far up the plane will it move before coming to rest?
0.319 m

A block slides with constant velocity down an inclined plane that has slope with angle $\ theta$ = 30 ^{o}. If the block is projected up the same plane with initial speed of2.5m/s. What fraction of the initial kinetic energy is transformed into potential energy?
0.5

A block slides with constant velocity down an inclined plane that has slope with angle $\ theta$ = 30 ^{o}. If the block is projected up the same plane with initial speed of 2.5m/s, After the block comes to rest, will it slide down the plane again?
It will not slide down

Given that the specific heat capacity of water is 15 times that copper, calculate the mass of copper at a temperature of 100^{o}C required to raise the temperature of 200 g of water from 20^{o}C to 24^{o}C, assuming no heat loss to the surrounding.
Solid friction

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

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.
40N

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

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

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

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 (π=22/7).
11cm/s

Which of the following is the best equation of a non-linear graph?
y=ax+bx

If the graph produced is a straight line, then the relationship is described as_____
Linear

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

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

Relative error can be defined as_____
Ratio of the possible error to the total measurement

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

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

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

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

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If the diameter of hydrogen atom is 0.000000000106 meters. what is the scientific notation ?
1.06 x10^-10

The mass of a water molecule is 0.000000000000000000000003g. Express in scientific notation.
3 x10^-23

In measurement report, the non-zero digits are_____
Significant

A digit is significant if and only if it affects_____.
The relative error

Multiply 1.23 by 2.3. Round off the result to more accurate measurement
2.8

Divide 2.1 by 1.54. Round off the result to more accurate measurement.
1.4

Multiply the following figures: 5.2865, 3.8 and 19.62 and round off the result to more accurate value
3.9x10

Divide 9.5362 by 3.2 round off the result to more accurate value
3

Straight line graph show that:
The relationship between the two variable are linear

The major errors in measuring instrument are
All of the options

Human errors are based on;
Judgement and perception

The possible error in measurement is due to
Inherent imprecision in measuring devices

A measurement reported to one hundredth of a centimetre's, such as 4.23cm, we can say;
It's less precise than 4.2cm

The temperature of two places are recorded to be 30.56C and 32.22C we can say that they are_____
Equally precise

The variables in the function y=Ae-kxare x and y. A negative slope will be obtained if a graph of
1n y is plotted against x

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

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II only

The inverse of the slope of graph of extension against tension in the spring represents_____.
Spring constant

Specific latent heat of fusion of a substance is the quantity of heat required to
Change the state of unit mass of the substance at its melting point

A piece of copper weighing 400g is heated to 100oC and then quickly transferred into a copper calorimeter of mass 10g containing oil of unknown specific heat capacity at 30oC. If the final temperature of the mixture is 50oC and the specific heat capacity of copper is 390JKg-1k-1The heat gained by calorimeter is:
78J

A piece of copper weighing 400g is heated to 100oC and then quickly transferred into a copper calorimeter of mass 10g containing oil of unknown specific heat capacity at 30oC. If the final temperature of the mixture is 50oC and the specific heat capacity of copper is 390JKg-1k-1, calculate the specific heat capacity of the oil.
386.1 JKg-1k-1

Let the measured value of two Widths beThe error in the quantity W = W1 + W2 will be_____
0.014m

_____is also known as determinant errors.
Systematic error

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?
Zero error

The error due to wear and tear of a particular instrument is called_____.
Back lash error

Error not due to instrumental problem is_____.
Observational error

_____causes like parallax in reading a voltmeter scale.
Faulty observation

The type of graph equation obeyed if T2 was plotted against M of the equation,
y = ax + b

8: There are_____different types of graphs in this course.
4

If W and V are related by equation, W= GVZ is reduced to a linear one, Z represents_____.
slope

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_____are due to causes which can be identified.
Systematic error

What is the unit of Mass?
Kilogram

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.
fractional error

Determination of acceleration due to gravitation using simple pendulum is independent of the bob's -----
---
mass

The fractional error in the quantity_____is given by n times the fractional error in B.
Bn

The error in the result is found by determining how much change occurs in the result when the maximum error occurs in the _____.
Data

Data collected can be used to show _____ between two physical quantities through graphs.
relationship

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

_____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.
simple harmonic motion

Materials that can regain their original shape after the deformation (change in dimensions) are called_
_____.
Elastic materials

When Θ is very small in simple harmonic motion then sin Θ = Θ in rad, acceleration, a is proportional to__.
displacement

Holding relative density bottle with a moisture hand results to _____
expansion

At_____position of Simple Harmonic Motion (SHM) the displacement of the body is zero.
Equilibrium

What is the unit of the specific latent heat of fusion of ice?
Jkg-1

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At equilibrium position of Simple Harmonic Motion (SHM) the speed of the body is_____.
Maximum

The dimensional unit of time is_____
T

When a mass is hung on a spring stretches 6 cm, its period of vibration if it is then pulled down a little is _____.
0.5s

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_____.
1kg

_____can be defined as the ratio of the mass of water to the mass of an equal volume of water.
Relative density

Relative density bottle is also called_____.
specific gravity bottle

The dimensional unit of distance is _____
L

Glass is an example of_____material
Brittle

_____states that the deformation of a material is proportional to the applied force in the elastic limit.
Hooke's law

When a material cannot recover its original shape, it is said to undergo_____.
plastic deformation

_____is a property that makes the surface of liquid to behave as if it is covered with an elastic skin.
surface tension

When you are taking reading from stop watch, you avoid error due to_____.
parallax

Question: What is another name for determinant error
Systematic Error

Question: The equation y mx b for a graph of y versus x indicates
Linear graph

Question: Where will thelinear graph of T2 against l gives pass through
origin

Question: Which error is responsible for wear and tear of instrumment

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Backlash Error

Question: Relative error is the ratio of possible error to the measurement
total

Question: Express 00000009km in scientific notation 9 x 10
7km

Question: A body of mass 2 kg moves in a circular path with a uniform speed of 10 ms If the radius of the path is 5m calculate the magnitude of centripetal force action on the body
40N

Question: In the Hookes law experiment the elastic constant obtained stands for
Elastic limit

Question: In an experiment for effective mass determination of a spiral spring and spring constant acceleration a is square of the angular speed isproportional to the displacementx the expression square of the angular speed is
frac2piT

Question: What would be the intercept of the graph in a simple pendulum experiment when T2 is plotted against h is
none of the options

Question: The dimension of spring constant is identical to that of
Surface tension

Question: Effective mass of a spiral spring is determined by
Intercept on the x axis

Question: A body weighs 160N in air and 120N when wholly immersed in a liquid of relative density 08 The relative density value of the body is g10ms 2
3.2

Question: A body of mass 20g appears to have a mas of 13g in oil and 12g in waterWhat is the relative density of oil
0.88

Question: A substance of density 4gcm3 causes 60g of turpentine of density 08gcm3 to overflow from a displacement vessel What is the mass of the substance
300g

Question: A body of mass 2kg and volume 5x10 4m3 is hanging from a balance graduated in Newtons What would the balance read when the body is in air and when fully immersed in paraffin of density 800kgm3
16N

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Question: The maximum force of friction that must be overcome before the motion between the surfaces begins is
Solid friction

Question: Which of these pairs of measurements is precise
187 cm or 1787 cm

Question: The relative error of the measurement of length 654 cm of possible error of 005 cm when the unit of measurement is 01 cm is
0.0008 cm

Question: A box of mass 1 kg rests on a frictionless inclined plane which is at an angle of 30o to the horizontal plane Find the constant force that needs to be applied parallel to the incline to move the box up the incline with an acceleration of 1ms2
59N

Question: A box of mass 1 kg rests on a frictionless inclined plane which is at an angle of 30 to the horizontal plane Find the constant force that needs to be applied parallel to the incline to move the box down the incline with an acceleration of 1ms2
39N

Question: A block slides with constant velocity down an inclined plane that has slope with angle theta 30 oFind the coefficient of kinetic friction between the block and the plane
0.577

Question: A block slides with constant velocity down an inclined plane that has slope with angle theta 30 o If the block is projected up the same plane with initial speed of25ms how far up the plane will it move before coming to rest
0.319 m

Question: A block slides with constant velocity down an inclined plane that has slope with angle theta 30 o If the block is projected up the same plane with initial speed of25ms What fraction of the initial kinetic energy is transformed into potential energy
0.5

Question: A block slides with constant velocity down an inclined plane that has slope with angle theta 30 o If the block is projected up the same plane with initial speed of 25ms After the block comes to rest will it slide down the plane again
It will not slide down

Question: Given that the specific heat capacity of water is 15 times that copper calculate the mass of copper at a temperature of 100oC required to raise the temperature of 200 g of water from 20oC to 24oC assuming no heat loss to the surrounding
Solid friction

Question: Which of these two measured values 5642cm and 800cm is more precise
A: 5642cm

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Question: Which of these two measured values 600g and 50g is more accurate
D: 600g

Question: What is the intercept of the equation W XY Z when Z is plotted against X
C: Y

Question: given that ymx if yxm a constant then
y is directly proportionate to x

Question: if ymx b and y is plotted aqainst x what type of graph will be obtained
linear graph not passing through the origin

Question: consider the equation ymx if we plot the graph of y aqainst x the graph obtain is called
linear graoh through the origin

Question: which of the following quantity is a derived quantity
velocity

Question: the equation of a graph is given by ymx m represent
all of the above

Question: if the equation of a graph is given as ymx b at x0 yb it means that
the graph intercept on the y axis

Question: in physics wehave the following as type of variable
all of the above

Question: the following physical quantities are fundament quantites except
density

Question: we use graph to show
a vivid picture of how two physical quantities are related

Question: if the value of quantity y depends on the value of quantity x then y is
dependent variable

Question: the followings are non linear graph except
simple pendulum graph

Question: consider the equation y mx b it implies that
the graph have a negative slope

Question: if two physical quantites P and Q are related as PKQ where K and n are unknown we can reduce the expression to linear by
taking logarithm of both side

Question: consider the equation yax c the graph of the equation will be

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non linear graph

Question: the major erros in measuring instrument are
all of the above

Question: quadratic equations can be classified as
non linear graph

Question: straight line graph showa that
the relationship between the two variable are linear

Question: consider the equation ymx it implies that
y is not a direct relationship

Question: boyles law shows that relationship between pressure and
volume when temperature is constant

Question: in Boyles which of the following statement is true
P is inversely propotional to T

Systematic error can be eliminated to an ___.
extent

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
time

The S.I unit of acceleration due to gravity, g is __.
ms^{-2}

The error due to wear and tear of a particular instrument is called____.
Back lash error

Error not due to instrumental problem is _____.
Observational error

_____causes like parallax in reading a voltmeter scale.
Faulty observation

A plotted graph showing a straight line through the origin indicates thatthe two plotted variables are ____ to each other
directly proportional

To record the observations during an experiment the measured values would be recorded to at least __ decimal places
two

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.
constant

____are due to causes which can be identified.
Systematic error

In the equation y = mx + b, m and b are ____.
constants

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.
fractional error

The following values 32, 30, 28, 26 have two significant digits except _____.
30

In recording the observations in an experiment, the calculated values like reciprocal, square, sine of values would be recorded to at least __ decimal places
three

The error in the result is found by determining how much change occurs in the result when the maximum error occurs in the _____.
Data

Data collected can be used to show____ between two physical quantities through graphs.
relationship

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

____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.
simple harmonic motion

Materials that can regain their original shape after the deformation (change in dimensions) are called____.
Elastic materials

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
object

A measurement possessing greater number of significant digits has _____ accuracy
Greater

At _____ position of Simple Harmonic Motion (SHM) the displacement of the body is zero.
Equilibrium

What is the unit of the specific latent heat of fusion of ice?
Jkg-1

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.
2.29

The period of oscillation is the time taken for the body to make ___complete oscillation
one

When a mass is hung on a spring stretches 6 cm, its period of vibration if it is then pulled down a little is _____.
0.5s

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 ____.
1kg

____can be defined as the ratio of the mass of water to the mass of an equal volume of water.
Relative density

Relative density bottle is also called _____ gravity bottle.
specific

If two values have equal unit of measurement, they are therefore said to be ___ Equally_____.
precise

Glass is an example of ____ material
Brittle

The relationship between any two physical quantities can be determined through the use of ___.
graph

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'
Hooke

If the graph of force F is plotted against the extension e, we shall obtain a ___ graph showing that Hooke's law is obeyed.
linear

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 $10ms^{-2}$ is ____.
83.33 Nm^{-1}

Which of the following measurement done with meter rule is more precise?
17.9 cm

Relative error is ___
the difference between possible error and the total measurement

The two types of variables that can be measured are ____.
X and Y variables

If two values have equal unit of measurement, they are therefore said to be ____
equally precise

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

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 (π=22/7).
20.4 cm/s

Which of the following is the best equation of a non-linear graph?
y=ax+bx

If the graph produced is a straight line, then the relationship is described as____

Linear

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

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

Relative error can be defined as____
product of the possible error to the total measurement

A measurement possessing greater number of significant digits has ___
less relative accuracy

The time taken for a given event is 7.4s and the possible error is 0.05cm, what is the relative error?
0.003

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

the following physical quantities are fundament quantities except
Density

Which of the following is correct about types of graph?
linear graph

Multiplication and division rule states that the product or quotient of two measurements should be rounded off ___
to contain less significant digits as the measurement having fewer numbers of significant digits

In measurement report, the non-zero digits are___
not significance

If x is equal to 1 in the equation y = mx, what will be the value of y?
y = 0

consider the equation $T= 2\pi\sqrt{(l/g)}$ if T is plotted against π,the graph obtains will be_____
linear graph

Which of these statements about measurement is correct?
All measurements are not exact

Multiply the following figures: 5.2865, 3.8 and 19.62 and round off the result to more accurate value
394.14

Divide 9.5362 by 3.2 round off the result to more accurate value
3.21

Scientific measurements are expressed by using ____
rules

The major errors in measuring instrument are
zero error

Human errors are based on;
judgement and precision

The possible error in measurement is due to
imprecision in measuring devices

Precision is a function of _____
relative error only

The temperature of two places are recorded to be 30.56C and 32.22C we can say that they are___
equally precise

A digit is significant if and only if ___
it affects the possible error

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

The inverse of the slope of graph of extension against tension in the spring represents _____.
reciprocal of the spring constant

If m and b are constants in the graph of y = mx + b. The value of the constant b represents ___.
intercept on the graph

The following are sources of error in a measuring instrument except ___
they arise due to changes in environment

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