Name:_____( ) Sec:_____ Date: _____

Chapter 1 Measurements

Physical Quantities and SI Units

1. There are altogether_____physical quantities.
2. Physical quantities are also known as _____ quantities.
3. In Singapore and in many other countries, one set of units is used to describe these quantities. This set of units is from the French and is known as_____.
4. In the table below, write down the SI unit and the symbol of the SI unit for each of the base quantities listed.

Base Quantity	SI Unit	Symbol for SI Unit
Length		
Mass		
Time		
Electric current		
Thermodynamic temperature		
Amount of substance		

Measurement of Length

5. What is the SI unit of **length**? _____
6. There are 4 instruments commonly used to measure length.
   a. These are the
   i. M_____ R_____
   ii. M_____ T_____
   iii. D_____ C_____
   iv. D_____ M_____ S_____ G_____
   b. Of these, which instrument has the greatest precision?
   _____
   c. Of these, which instrument has the least precision?
   _____

d. If I wanted to measure the length of a room, which instrument would I use?

_____

e. If I wanted to measure the thickness of a book, which instrument would I use?

_____

f. If I wanted to measure the thickness of a coin, which instrument would I use?

_____

Measurement of Time

7. What is the SI unit of **time**? _____
8. There are 3 types of equipment commonly used to measure time.
   a. These are the
      i. P_____
      ii. C_____
      iii. S_____
   b. Of these, which instrument is the most accurate?

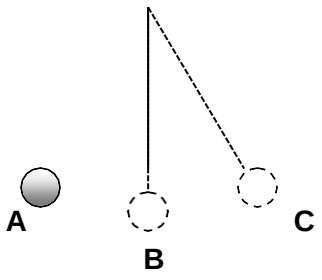
      _____

   c. Define the term **period** of a pendulum.

_____

_____

9. The figure below shows a pendulum.



   a. Trace the path it travels to complete one oscillation.

      _____

   b. If it takes 0.40 s to swing from A to B, what is its period?

      _____

Scalars and Vectors

1. Scalar quantities are physical quantities that have only _____

2. Vector quantities are physical quantities that have both _____ and _____

Distance and Displacement

3. What is **distance**?

   _____

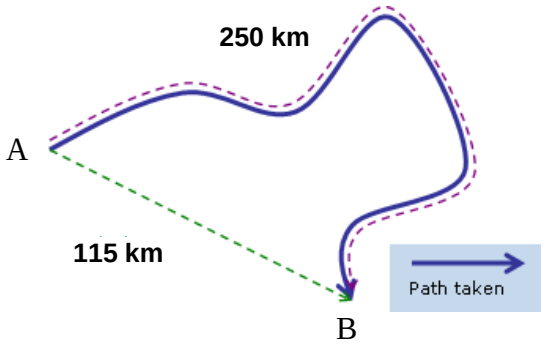
   _____

4. What is **displacement**?

   _____

   _____

5. A car travels from town A to town B taking the path as shown in the figure below.



   a. What is the distance it covered? _____km

   b. What is its displacement? _____km

Chapter 2 Kinematics

Speed and Velocity

1. What is **speed**? State its **SI unit**.

   _____

   _____

2. What is the formula used to find the **average speed** over a certain period of time?

   Average Speed =

3. A train takes 2 hours to travel from Town A to town B. It takes another 1 hour to travel from Town B to Town C. The distance between Towns A and C is 180 km. What is its average speed in terms of km/h and m/s?

   Average speed =_____km/h

   _____m/s

4. What is **velocity**? State its **SI unit**.

   _____

   _____

5. What is the formula used to find the **average velocity** over a certain period of time?

   Average velocity =

Acceleration

6. What is **acceleration**?

   _____

7. What is the formula used to find the **acceleration** over a certain period of time?

   Acceleration =

   a =

8. What is the **SI unit** for acceleration? _____

9. A car accelerates from 20 m/s to 50 m/s in 10 s. What is its acceleration?

Acceleration =_____m/s^2

Acceleration due to gravity or Acceleration of Free Fall, *g*

1. For objects close the Earth's surface, the acceleration due to gravity, or acceleration of Free Fall, is taken to be a constant value of _____

2. A flower pot falls from rest from a ledge. Calculate the speed of the flower pot after 2.0 s.

Speed =_____m/s

Chapter 3 Force and Pressure

Types of Forces

1. A force can be thought of as a _____ or a _____ due to the interaction between objects.

2. The type of force between objects that are in contact is known as contact force.

   Name 4 contact forces.

   a. _____
   b. _____
   c. _____
   d. _____

3. Another type of force that does not require objects to be in contact is known as non-contact force

   Name 3 non-contact forces.

   a. _____
   b. _____
   c. _____

Mass and Weight

1. Mass is the _____ in a body.
2. The SI unit of mass is the _____
3. Weight is the _____ acting on an object that has mass.
4. The SI unit of weight is the _____

Gravitational Field Strength

1. A gravitational field is a region in which a mass experiences a _____

2. Gravitational field strength *g* is the _____ at that point.

Relationship between Mass and Weight

1. What is the formula used to find **weight**?

   Weight =

   W =

2. Since weight is a force, what is the SI unit for weight? _____

3. What is your **mass**?_____kg

4. What is your **weight** on
   a. earth? (*g* on earth is 10 m/s^2)

      Weight on earth =_____ N

   b. moon, given that the gravitational field strength on moon is 1/6 that of earth?

      Weight on moon =_____N

Density

1. Density is defined as _____

2. What is the formula for **density**?

   Density =

   ρ =

3. What is the SI unit of density? _____

4. A measuring cylinder contains 50 cm^3 of water originally. When a stone is lowered into the water so that it is completely below the surface, the reading goes up to 66 cm^3. Mass of stone = 68 g. What is the density of the stone?

Volume of stone =_____cm^3

Density =_____g/cm^3

Density and Flotation

5. If a substance has higher density than water will it float or sink in water?

_____

6. The densities of 2 types of metals are listed below.

Metal	Density (g/cm^3)
Gold	19.3
Brass	8.56

Which metal will float when placed into a beaker of liquid mercury? (Mercury has a density of 13.6 g/cm^3)

Pressure

1. What is pressure exerted by an object?

   _____

2. What is the formula for pressure?

   Pressure =

   P =

3. The SI unit of pressure is _____ or _____

4. The weight of a boy is 550 N. The total area of his feet in contact with the ground is 0.12 m^2.

   Calculate the pressure exerted by the feet of the boy on the ground.

   Pressure =_____Pa