

BANGLADESH INTERNATIONAL TUTORIAL LIMITED

Physics Worksheet

Class X

Subject Teacher: P.K. Saha

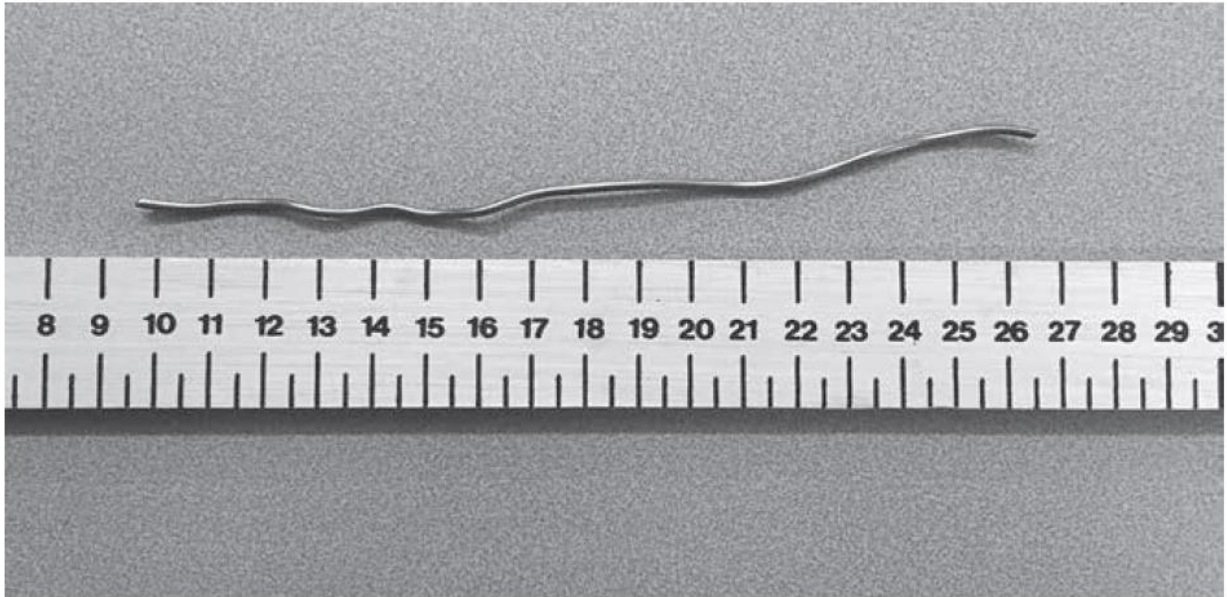
WEEK 01

Marks: 30

STUDENT'S NAME: _____

DATE: 4/4/2020

- 5 A student investigates how the length of a piece of wire affects its resistance.
- (a) The photograph shows how he uses a ruler to measure the length of the wire.



(i) State how the student could improve the precision of his measurement.

(1)

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(ii) Suggest three ways the student could improve the accuracy of his measurement.

(3)

1

.....

2

.....

3

.....

(b) The student finds the resistance for seven different lengths of wire.
He does this by passing a small current through each wire.

(i) Explain why the current in each wire must be small.

(2)

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(ii) The table shows the student's results.

Length of wire in cm	Resistance in ohms
10	2.8
15	4.5
20	6.1
50	14.9
55	16.3
60	18.0
65	19.4

Suggest two improvements the student could make to the data he collects.

(2)

1.....

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2.....

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(a) Which of these is a vector quantity?

(1)

- A** density
- B** force
- C** mass
- D** speed

(b) Which of these is a scalar quantity?

(1)

- A** acceleration
- B** energy
- C** momentum
- D** velocity

(c) When a book from a low shelf is placed on a higher shelf, the book gains

(1)

- A** gravitational potential energy
- B** mass
- C** weight
- D** work

(d) When an object falls at terminal velocity

(1)

- A** it accelerates at 10 m/s^2
- B** it has no weight
- C** the resultant vertical force is downwards
- D** the vertical forces on it are balanced

The photograph shows some large concrete cubes.



The mass of one of the concrete cubes is 1000 kg.

(a) State the weight of this concrete cube.

Give the unit.

(2)

weight of concrete cube = unit

(b) The density of this concrete cube is 2300 kg/m^3 .

(i) State the equation linking density, mass and volume.

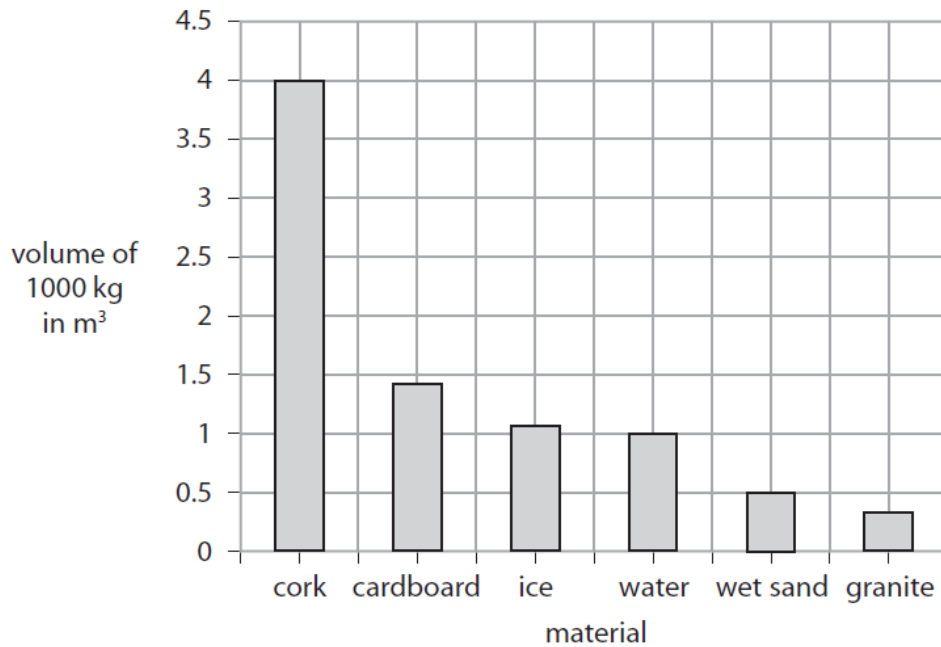
(1)

(ii) Calculate the volume of this concrete cube.

(2)

volume of concrete cube = m^3

(c) The graph shows the volumes of 1000 kg of some other materials.



(i) State the type of graph shown.

(1)

(ii) Give a reason why a line graph is not an appropriate way to display this data.

(1)

(iii) Use information from the graph to compare the densities of cork and water.

(2)

The particles in the different states of matter behave differently.

- (a) Draw a straight line linking each state of matter with the description of its particles. (2)

state of matter	description of particles
solid	close together, moving about and can slide past one another
liquid	far apart, moving quickly and at random
gas	close together, vibrating about fixed positions

- (b) Ethyne is a substance that is a gas at room temperature.

At a temperature of -81°C , ethyne can exist as a solid, a liquid or a gas.

This temperature is called the triple point of ethyne.

- (i) Complete the table by giving the missing temperatures. (2)

	Temperature in $^{\circ}\text{C}$	Temperature in kelvin
room temperature		291
triple point of ethyne	-81	

- (ii) State what happens to the average kinetic energy of the gas molecules as the temperature is lowered from room temperature to the triple point of ethyne. (1)

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(iii) State what happens to the volume of an ethyne molecule when the gas changes to a solid at the triple point.

(1)
