

St. Ignatius College
Boys' Secondary School, Handaq
Half-Yearly Examination 2009/2010

Form 3 Track 1

PHYSICS – Practical session

Time: 15 min

Name: _____

Class: _____

1	2	3	4	Practical Session

Station 1: Taking Measurements:

Using a ruler to find the length, breadth and height of the following regular objects:

Object	Length (cm)	Breadth (cm)	Height (cm)
Aluminium block			
Wood			

(6 Marks)

Station 2: Volume

Part A: Reading the Volume

Find the volume of the coloured liquids from the different measuring cylinders.

Liquid	Volume (cm ³)
Green	
Yellow	

(4 Marks)

Part B: Finding the Volume of a piece of Plasticene using a measuring cylinder

Using a measuring cylinder, find the volume of a piece of Plasticene by measuring the displacement of water.

Volume of water = _____ cm³

Volume of water + Plasticene = _____ cm³

Volume of Plasticene = _____ cm³

(5 Marks)

Station 3: Measuring Mass:

Find the mass of the following objects:

Object	Mass (g)
Aluminium	
Wood	
Stone	
Plasticene	
Book	

(5 Marks)

Station 4: Velocity

Find the time taken for a trolley to go down the ramp.

Time = _____ s

If the distance travelled by the trolley is _____ m, find the velocity of the trolley by using the equation:

Velocity = $\frac{\text{Distance}}{\text{Time}}$ = _____ = _____ m/s

(5 marks)

St. Ignatius College
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Form 3 Track 1

PHYSICS

Time: 1 hour 30 min

Name: _____

Class: _____

1	2	3	4	5	6	7	8	9	Main	Course work	Oral	Global

Useful equations:

Volume = Length x Breadth x Height

Density = Mass ÷ Volume

Velocity = Distance ÷ Time

Answer **ALL** questions in the space provided. **ALL** working must be shown. The use of a calculator is allowed.

1. **Fill in the blanks** of the following table, the first one is done for you.

Quantity	Units
Mass	Kg
Length	
Time	
Volume	
Velocity	

(2 Marks)

2. a. **Match the correct instrument** to measure the length of each object:

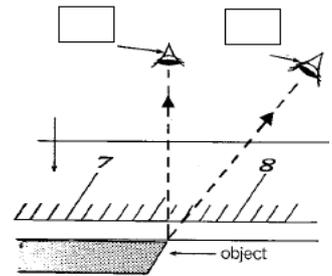
- | | |
|-------------------------------|------------------|
| The height of a desk | Vernier Calipers |
| The height of the room | 30cm Ruler |
| Length of a book | Metre Ruler |
| Thickness of a pipe | Tape Measure |

(2 Marks)

b. **Underline the correct answer** and **tick the box** which is correct.

You should take the readings at (next level, eye level, below level)

(2 Marks)



c. **Use your ruler to measure the length** of each pen.

i. _____



ii. _____

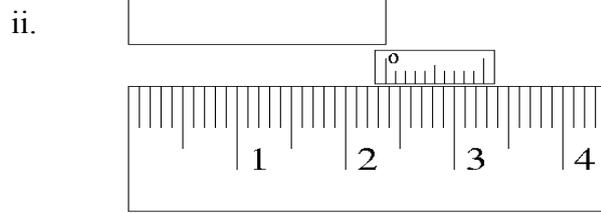
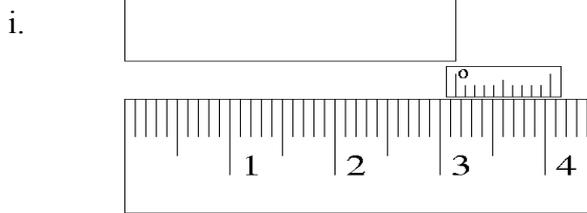


iii. _____



(3 marks)

d. **Give the reading** on each vernier calipers.

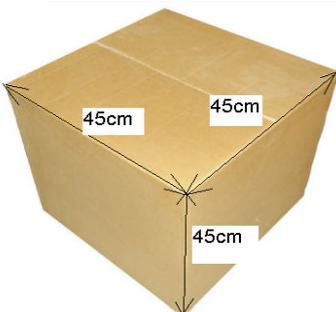


(4marks)

3. Help Stephan to **calculate the volume** of all containers. Show your working in the box below.

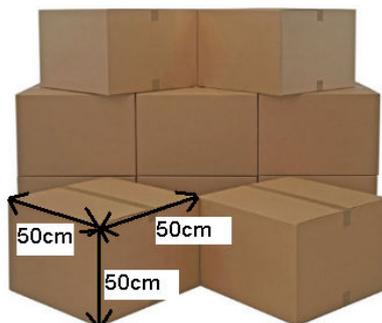
i.

1 cardboard box



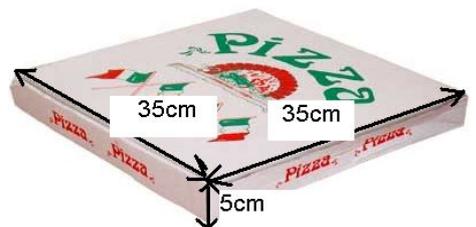
ii.

10 large boxes



iii.

1 pizza box



(6 marks)

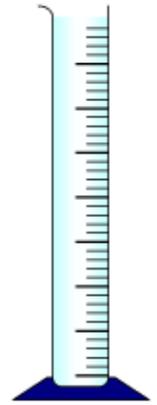
4. **Underline** the correct answer.

a. The instrument in the picture needs to be placed on a (horizontal, large, clean) surface.

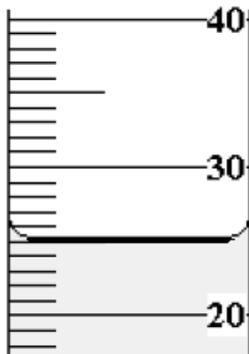
(1 mark)

b. The instrument is used to measure the volume of (Solids, Liquids, Tables).

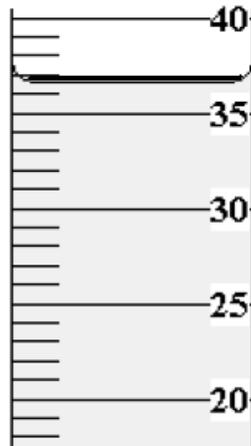
(1 mark)



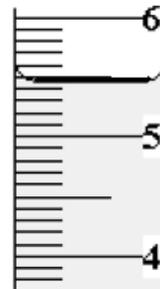
c. **Give the value** shown in the instrument.



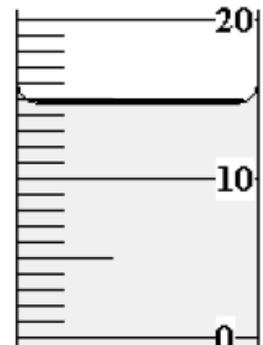
i. _____



ii. _____



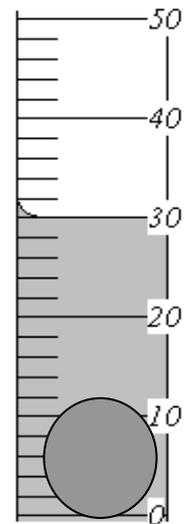
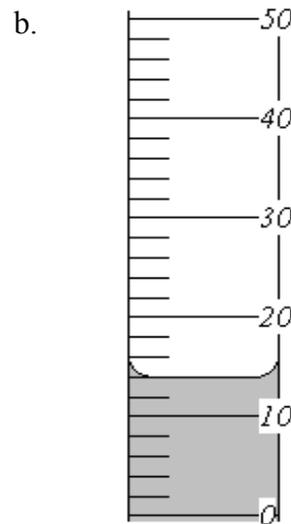
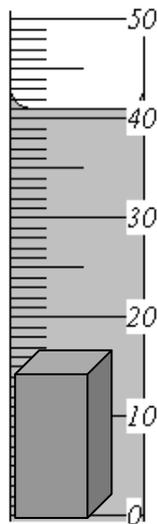
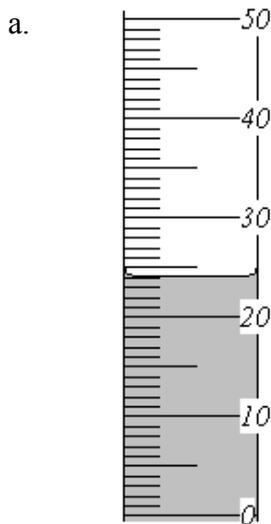
iii. _____



iv. _____

(4 marks)

5. **Find the volume** of the following objects.



Volume of block = _____

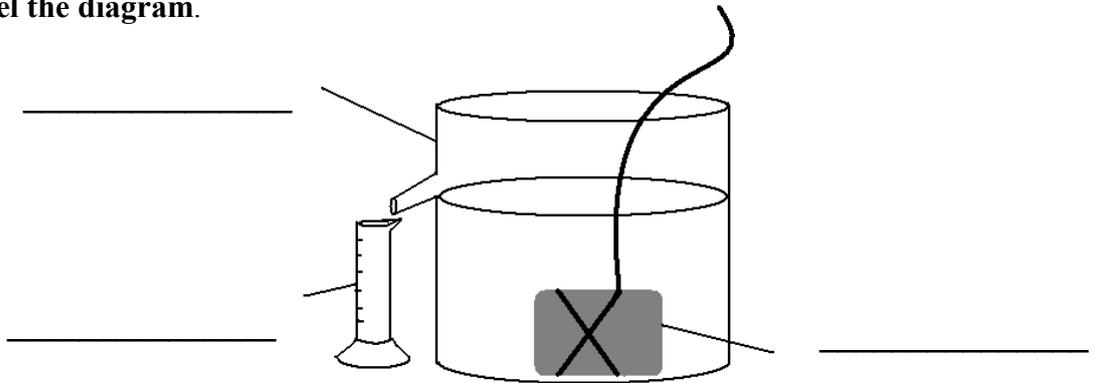
Volume of marble = _____

(4 marks)

6. a. **Underline** the correct word.

The instrument used below is called a (displacement can, water can, measuring can).
(1 mark)

b. **Label the diagram.**



(3marks)

c. **Describe the steps used to find the volume.** Write numbers close to the sentences to describe the order. The first one has been done for you.

Place the measuring cylinder under the nozzle.	
Measure the volume of the stone from the measuring cylinder.	
Lower the stone in the water.	
Fill the can with water up to the nozzle.	1

(3 Marks)

7. The football coach wants to find the mass of different objects. He has two balances.



Bathroom scales



Electronic balance



a. **Choose the correct balance** to find the mass of the following objects:

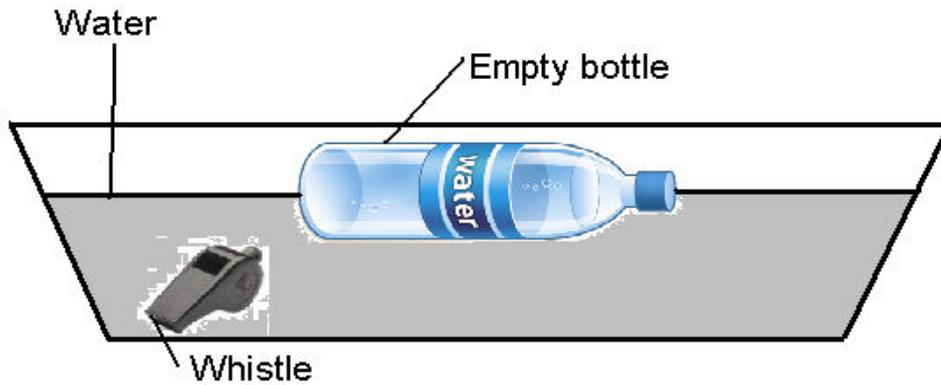
i.  The mass of the whistle. _____

ii.  The mass of a player. _____

iii.  The mass of a water bottle. _____

(3 marks)

b. The football coach placed the whistle and the bottle in the water as shown. **Choose the correct word** to complete the sentence.



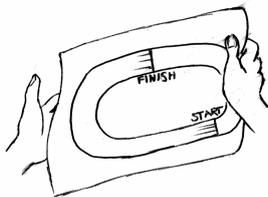
- i. The bottle _____ in the water. **Sinks or Floats**
- ii. The bottle has a density that is _____ than that of water. **More or Less**
- iii. The density of water is _____ than that of the whistle. **More or Less**

(3 marks)

c. A student found the mass of the whistle to be 120g and the volume to be 20cm³. Calculate the density of the metal making the whistle.

(2 marks)

8. Maria and Kate want to measure their **average velocity**.



a. To measure the distance they used the _____ . (1 mark)

b. To measure the time they used a _____ . (1 mark)

c. Calculate the average velocity when:

i. Maria ran 100m in 12.5s. Her average velocity was:

ii. Kate ran 200m in 32s. Her average velocity was:



(4marks)

9. Complete the crossword by answering the questions below.

The crossword puzzle grid consists of 10 numbered starting points for words:

- 1: Down, 10 cells
- 2: Across, 10 cells
- 3: Across, 6 cells
- 4: Across, 10 cells
- 5: Across, 14 cells
- 6: Down, 4 cells
- 7: Across, 4 cells
- 8: Across, 10 cells
- 9: Across, 10 cells
- 10: Across, 6 cells

Down

- 1. Can be used to measure the volume of a liquid.
- 6. Measures the speed of a car.

Across

- 2. The greater the area of a the lower its velocity.
- 3. Can be found by mass ÷ volume
- 4. Used to measure the speed of sound.
- 5. Can be used to measure the thickness of a wire.
- 7. The density of water is than that of a stone.
- 8. Are used to measure the level of sound.
- 9. The datalogger and sensors give a more measure of time than a stopwatch.
- 10. The speed of light is than the speed of sound.

Solution:

Datalogger, Higher, Lower, Accurate, Vernier caliper, Measuring cylinder, Density, Decibels, Speedometer, Parachute. (10marks)