

Subject: **Science/Physics**

**Grade 9+**

**Practice Question paper 2      50 marks**

Name of student: .....

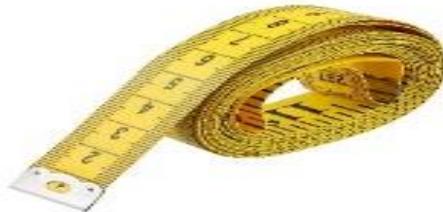
**Question 1 – MCQ. Put a circle around the correct answer A, B, C or D. [10 marks]**

1. What is the SI unit of temperature?

- A. K
- B.  $m^3$
- C.  $cm^2$
- D. kg

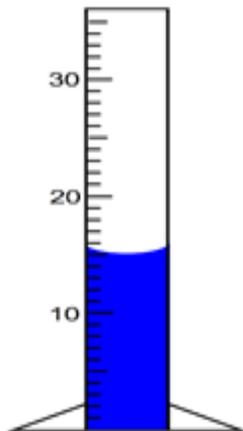
2. Which physical quantity does this instrument measure?

- A. Weight
- B. Mass
- C. Length
- D. Time



3. The volume of liquid in the measuring cylinder is .....

- A.  $10\text{ cm}^3$
- B.  $15\text{ cm}^3$
- C.  $16\text{ cm}^3$
- D.  $20\text{ cm}^3$



4. The diagram shows a candle burning.

The wax in the candle possesses .....

- A. light energy
- B. chemical energy
- C. kinetic energy
- D. electrical energy



5. What conversion of energy occurs in a battery-operated radio?

- A. chemical energy → light energy
- B. chemical energy → sound energy
- C. chemical energy → kinetic energy
- D. chemical energy → potential energy



6. Which one of the following is **non-luminous**?

- A. Earth
- B. Star
- C. Firefly
- D. Bulb

7. A vector quantity gives the magnitude and one additional information. This additional information is:

- A. size
- B. thickness
- C. direction
- D. colour

8. A car travels a distance of 300 m in 10 s. What is its average speed?

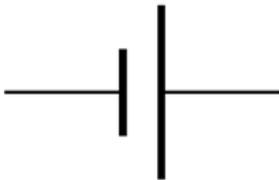
- A. 30 m/s
- B. 300 m/s
- C. 310 m/s
- D. 3000 m/s

9. A boy walks a distance of 100 m from home to a nearby shop to buy chocolate. After buying, he returns home by the same road.

What is his displacement when he reaches home?

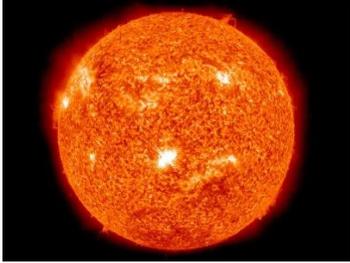
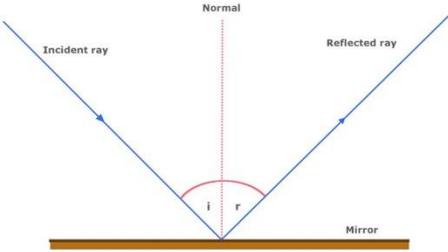
- A. 100 m
- B. 200 m
- C. 50 m
- D. 0 m

10. What does this symbol represent?



- A. a switch
- B. a resistor
- C. a bulb
- D. a cell

2. Match each item in column A with the corresponding item in column B. [5 marks]

Column A		Column B
 $i = r$   		<p>A luminous body</p> <p>Image size equals object size on a plane mirror</p> <p>Reflection of a ray of light</p> <p>A non-luminous body</p> <p>Equation for law of reflection</p>

3. State whether the following is **True** or **False**. [5 marks]

(a) Wood is a source of chemical energy	
(b) A boy standing on the top of a building has kinetic energy	
(c) A compressed spring has potential energy	
(d) In a torch chemical energy is converted to light energy	
(e) A lit candle has electrical energy	

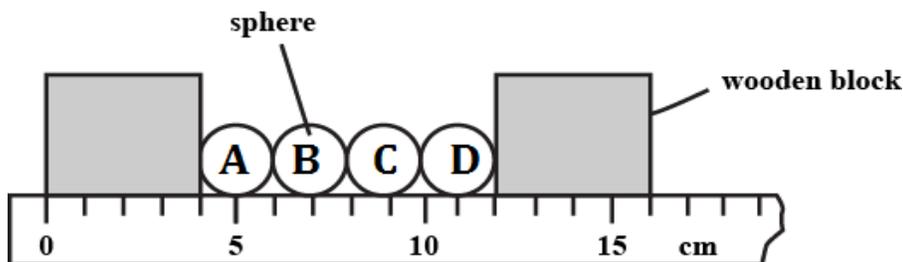
4. Fill in the blanks by choosing the correct word from the list below.

Each word can be used only once. [5 marks]

**converging    light    rays    diverging    collection    reflection**

- (a) Light is represented using .....
- (b) A ..... of light rays is called a beam.
- (c) The three types of light beams are parallel, ..... and ..... beams.
- (d) ..... enables us to see things around us.

5. The following arrangement is being used to measure the diameter of a spherical marble. Four identical marbles are held together on a metre rule using two rectangular blocks of wood. [6 marks]



(a) Write down the reading on the ruler at the start of marble A. (1)

.....

(b) Write down the reading on the ruler at the end of marble D. (1)

.....

(c) Complete the following table. (2 + 1)

Diameter of 4 marbles	..... cm
Diameter of 1 marble	..... cm

(d) A metre rule is an instrument used to measure length. Name an instrument that is used to measure longer distances. (1)

.....

6. A car is travelling at a speed of 15 m/s. The driver presses on the accelerator and the speed of the car increases uniformly to 35 m/s in 10 s. [10 marks]

(a) Define acceleration. (2)

.....

(b) Is acceleration a scalar or vector quantity? Explain your answer. (2)

.....

.....

(c) Write down the equation for calculating acceleration. (2)

$$\textit{acceleration} = \text{-----}$$

(d) Use the equation to calculate the acceleration of the car. (2)

.....

After accelerating for 10 s, the driver applies the brakes and decelerates the car uniformly to rest in 7 s.

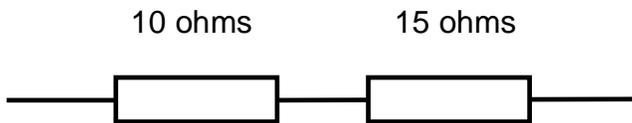
Calculate the deceleration of the car. (2)

.....

.....

7. (a) Draw a labelled diagram to show a circuit with two cells in series, a switch and a bulb. (3)

(b) Find the total resistance for the arrangement shown. (2)



Total resistance is ..... ohms.

(c) What is the disadvantage of connecting two bulbs in series in a circuit? (2)

.....  
.....

(d) A charge of 100 C flows in a wire and gives rise to a current of 5 A.

Calculate the time for which this charge has been flowing. (2)

.....  
.....