

Physics Test Grade VII
Physical Quantities

Time: 1hr

MM: 45

A. Choose the correct answer:

1 x 5 = 5

- The speed of body is calculated by
 - distance/time
 - distance x time
 - time - distance
 - distance + time
- The SI unit of density is
 - g/cm^3
 - g/m^3
 - kg/cm^3
 - kg/m^3
- The correct relation is
 - Density = mass x volume
 - Mass = density x volume
 - Density = volume / mass
 - Volume = density x mass
- When a substance is heated its density
 - increases
 - decreases
 - remains same
 - first decreases then increases
- The following is the characteristic property of a substance
 - density
 - volume
 - weight
 - now

B. Fill in the blanks:

1 x 6 = 6

- A graduated cylinder measures _____ of a liquid.
- At 4°C the density of water is _____ kg/m^3 .
- A physical balance is used to measure _____ of an object.
- Equal volumes of iron and aluminium have _____ masses.
- With rise in temperature the density of a substance _____.
- A hydrometer is used to measure _____ of a liquid.

C. Write True (T) or False (F) against the following statements:

1 x 7 = 7

- The force with which the earth attracts a body is called its mass.
- Speed of body is a scalar quantity.
- Mass is measured by using a spring balance.
- Equal volumes of water and kerosene have the same mass.
- The SI unit of density is g/cm^3 .
- Density of a body depends on its shape and size.
- A piece of iron sinks in water but floats in mercury.

D. Match the following:

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Column A

Column B

- | | |
|------------|-----------------------|
| 1. Mass | a. Hydrometer |
| 2. Density | b. SI unit of density |
| 3. kg | c. Beam balance |
| 4. kg/m | d. km/h |
| 5. Speed | e. SI unit of mass |

E. With proper reasoning choose the odd one out:

$4 \times \frac{1}{2} = 2$

1. kilogram, gram, metre per second
2. kg/m^3 , g/cm^3 , kg/cm^3
3. Beam balance, spring balance, physical balance
4. Hydrometer, density bottle, physical balance

F. Answer the following questions:

$2 \times 3 = 6$

1. Define the following terms and state the SI unit:
a. Volume b. Density c. Speed
2. What is meant by the statement 'iron is denser than wood'?
3. How does the density of a liquid vary with temperature?

G. Correct the given expressions.

1

1. $\text{mass} = \text{Volume}/\text{Density}$
2. $\text{Time} = \text{speed} \times \text{distance}$

H. Draw a diagram of a measuring cylinder

2

I. Give reasons for the following:

4

1. Equal masses of different substances have different volumes.
2. Equal volumes of different substances have different masses.
3. The lower end of a hydrometer is filled with mercury or lead.
4. Bodies like cork or wood float on water.
5. An iron needle sinks in water, but an iron ship floats on water.

J. Numericals:

$2 \times 4 = 8$

1. Calculate the area of the shape drawn on the square grid. Assume each square unit = 1 sq. cm.
2. An iron block weighs 23.4 kg. Its volume is found to be 3000 cm^3 . Find its density in g/cm^3 and in kg/m^3 .

3. If the density of ice be 0.91 g/cc , then what will be the volume of ice when volume of water is 1000 cm^3 ?
4. Aditya cycles to school at a speed of 24 km/h . His school is 8 km away. How long will he take to reach school?

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