



**Subject:** Grade 8 Natural Sciences

**Topic:** Density

**Total:** 34 Marks

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1. false 2 marks

**Explanation:**

Steel is denser than wood, thus the particles are packed closer in steel than in wood.

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2. float 3 marks

**Explanation:**

If it is more dense than the liquid it will sink.

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3. D: gold 4 marks

**Explanation:**

Substances that are less dense than water will float on water. Gold is denser than water and will therefore sink to the bottom. This applies to all metals.

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4. gasoline | milk | mercury 6 marks

**Explanation:**

The one with the highest density will be at the bottom (mercury) and the one with the lowest density will be at the top (gasoline).

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5. B: The oil is less dense than water. 4 marks

**Explanation:**

A liquid that is less dense than water will float on water. Oil is less dense than water and will therefore float on water.

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6. D: 0. 67 g/cm<sup>3</sup> 4 marks

**Explanation:**

density = mass ÷ volume

2 kg = 2000 g (mass must be converted to grams)

$D = m/V$

$= 2000 \text{ g} \div 3000 \text{ cm}^3$

$= 0. 6666666667 \text{ g/cm}^3$

Rounded off = 0. 67 g/cm<sup>3</sup>

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7. false

2 marks

**Explanation:**

Solids are usually the most dense and gas the least dense. It's interesting to note that ice (solid) is less dense than water (liquid). This is an exception to the rule.

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8. false

2 marks

**Explanation:**

The greater the mass of a material in a certain volume, the more dense the material is. A greater mass implies there are more particles, and since the volume is the same they must be packed closer together.

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9. density

3 marks

**Explanation:**

The particles are already tightly packed and cannot be squeezed closer together.

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10. C: gas

4 marks

**Explanation:**

Gases can be compressed easily because there are large spaces between the particles. Gases have a low density.

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**Total:** 34 Marks