

Mixtures, solutions and dissolving

Grade 6 science (Year 7 · Class 6) · Test answers (mark scheme)

Use this guide to mark your own work. Give marks for each correct point, even if the wording differs from the model answer. Total your marks out of 20 and revise the topics where you lost marks.

Level: Grade 6 science (Year 7 · Class 6) · **Curriculum:** MS-PS1-2

Question 1 Homogeneous or heterogeneous (2 marks)

- a. Homogeneous. (1)
- b. Heterogeneous. (1)

Marking: 1 mark each.

Question 2 Key words (3 marks)

- a. The substance that dissolves. (1)
- b. The substance (usually a liquid) that does the dissolving. (1)
- c. The uniform mixture formed when a solute dissolves in a solvent. (1)

Marking: 1 mark each definition.

Question 3 Coffee in a mug (3 marks)

- a. $8 + 192 = \mathbf{200\ g}$. (1)
- b. $50 \div 200 \times 8 = \mathbf{2\ g}$. (1)
- c. $\mathbf{8\ g}$. (1)

Marking: 1 mark each part.

Question 4 Saturation (2 marks)

A saturated solution holds as much solute as can dissolve at that temperature (1). Extra solute stays undissolved and settles at the bottom (1).

Marking: 1 mark for each point.

Question 5 Solubility of salt Q (3 marks)

- a. $\mathbf{55\ g}$. (1)
- b. $2 \times 100\ \text{g} = \mathbf{200\ g}$. (1)
- c. The solubility increases as the temperature rises. (1)

Marking: 1 mark each part.

Question 6 Speed of dissolving (3 marks)

In hot tea the water particles move faster (1). They collide with the sugar more often and with more energy (1), so the sugar particles are pulled away and spread out sooner (1).

Marking: 1 mark each for faster movement, more frequent and energetic collisions, sugar spreads sooner.

Question 7 Correct the calculation (2 marks)

The salt does not disappear, so its mass is still present (1). Mass of solution = $50 + 200 =$ **250 g** (1).

Marking: 1 mark for the idea, 1 mark for 250 g.

Question 8 Sea water (2 marks)

It contains salt and water, which are different substances (1) that keep their own properties and are not chemically combined; the amount of salt varies from place to place (1).

Marking: 1 mark for each valid reason.