Chemistry Unit 1 & 2 — Practice Exam 1 — Answers & Explanations

Answers to the 15 questions in the free preview.

Chemistry

1. A. 2
The first shell (n = 1) holds a maximum of 2 electrons.

2. C. The number of protons
The atomic number is the number of protons in the nucleus, which also equals the number of electrons in a neutral atom.

3. C. Displacement
Magnesium displaces hydrogen from hydrochloric acid, making this a displacement reaction.

4. B. 2, 1, 2
$2H_2 + O_2 \rightarrow 2H_2O$ balances both hydrogen (4 atoms) and oxygen (2 atoms) on each side.

5. D. 8
The second shell (n = 2) holds a maximum of 8 electrons ($2n^2 = 2 \times 2^2 = 8$).

6. C. 6
The atomic number equals the number of protons, so carbon has 6 protons.

7. A. Isotopes
Isotopes are atoms of the same element (same protons) with a different number of neutrons.

8. D. No charge (neutral)
A neutron has no electric charge, unlike protons (positive) and electrons (negative).

9. B. Positive ion (cation)
Losing a negatively charged electron leaves the atom with a net positive charge, forming a cation.

10. B. Valence (outer shell) electrons
Elements in the same group share the same number of valence electrons, giving them similar chemical properties.

11. A. Exothermic reaction
An exothermic reaction releases energy, usually as heat, to its surroundings.

12. D. A salt and water
A neutralisation reaction between an acid and a base produces a salt and water.

13. D. 1, 3, 2
N2 + 3H2 → 2NH3 balances nitrogen (2 atoms each side) and hydrogen (6 atoms each side).

14. B. H2O
Water is made of two hydrogen atoms and one oxygen atom, giving the formula H2O.

15. B. A single displacement reaction
Zinc, a more reactive metal, displaces copper from the compound, which is a single displacement reaction.

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PREVIEW

That’s the end of the preview answers

These are the answers to the 15 preview questions. The full answer key covers all 30 questions in Chemistry Unit 1 & 2 — Practice Exam 1, with the working behind every mark.

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