**Chemical elements**

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| Instructions to students  • You have 50 minutes to complete the test.  • Please answer all questions in the spaces provided.  • There is to be no talking during the test. | Marks  Section I: Multiple-choice questions: 5 marks  Section II: Short-answer questions: 10 marks  Section III: Extended-response questions: 10 marks  Total: 25 marks |

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| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Score: /25  Grade: % |
| Comments: | |

Section I: Multiple-choice questions

For each question, circle or highlight the correct answer.

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| 1 What process is shown in this diagram? | |  |
| A | Diffusion |
| B | Expansion |
| C | Freezing |
| D | Viscosity |
| 2 Mass is measured in: | | |
| A | inches. | |
| B | metres. | |
| C | kilograms. | |
| D | litres. | |
| 3 Which of the following lists what a substance does during a chemical reaction? | | |
| A | Boiling point, viscosity, bubbles produced | |
| B | Density, bubbles produced, tensile strength | |
| C | Bubbles produced, new substance formed, permanent colour change | |
| D | Heat capacity, density, expansion | |
| 4 The particle model is also known as: | | |
| A | Dalton’s theory. | |
| B | particle energy theory. | |
| C | the theory of matter and change. | |
| D | the kinetic theory of matter. | |

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| 5 What are the three states of matter? | |
| A | Freezing, melting and evaporating |
| B | Solid, liquid and gas |
| C | Elements, molecules and compounds |
| D | Solidification, condensation and freezing |

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|  | Section I  Total marks:  /5 marks |

Section II: Short-answer questions

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| 6 Draw diagrams in the boxes provided to show the particle arrangement of ice and water vapour. | | | | |
|  | Ice | | | |
|  | Water vapour | | | |
|  | | | /4 marks | |
| 7 Write a definition for the term ‘viscosity’. | | | | |
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|  | | | /1 mark | |
| 8 Gases are able to be compressed, whereas both solids and liquids are incompressible. Explain why. | | | | |
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|  | | | | /3 marks |
| 9 What is diffusion? Given an example. | | | | |
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|  | | /2 marks | | |
|  | | Section II  Total marks:  /10 marks | | |

Section III: Extended-response questions

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| 10 Alexandra placed a beaker of ice on a bench. Every 30 minutes she measured the temperature of the ice water until the ice was completely melted.  Discuss why the liquid inside the thermometer will rise as the beaker of ice melts. | |
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|  | /5 marks |

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| 11 Alexandra’s results from her experiment are shown in the table below.Graph her results. | |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Time (minutes) | 0 | 30 | 60 | 90 | 120 | 150 | 180 | | Temperature (°C) | 0 | 3 | 7 | 12 | 15 | 16 | 16 | | |
|  | |
|  | /5 marks |
|  | Section III  Total marks:  /10 marks | |