**Resources (answers)**

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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: 12 marks  Section III: Extended-response questions: 8 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 Minerals are classed as: | |
| A | Non-renewable resources. |
| B | recyclable resources. |
| C | non-recyclable resources. |
| D | easily renewable resources. |
| 2 What are the three main sources of Australia’s energy? | |
| A | Nuclear energy and coal |
| B | Coal, solar energy and natural gas |
| C | Coal, oil and natural gas |
| D | Solar energy, wind power and hydroelectricity |
| 3 Australia has the world’s largest supply of uranium, but how much of Australia’s electricity is generated from uranium? | |
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| A | 100% |
| B | 0% |
| C | 3% |
| D | 50% |

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| 4 Gases in the atmosphere that can absorb heat are called: | |
| A | natural gases. |
| B | fossil fuels. |
| C | greenhouse gases. |
| D | renewable resources. |
| 5 Hybrid cars use a mix of: | |
|  | |
| A | gas and electricity. |
| B | fuel cells and methanol. |
| C | petrol and gas. |
| D | petrol and electricity. |

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|  | Section I  Total marks:  /5 marks |

Section II: Short-answer questions

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| 6 Outline the four main steps involved in the formation of fossil fuels like brown coal. | | | |
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| 1 Trees and other plants fall into swamps. (1 mark)  2 Plant matter builds up underwater. (1 mark)  3 Plant matter rots underwater and forms peat. (1 mark)  4 With pressure and heat, coal is formed. (1 mark) | | | |
|  | | | /4 marks |
| 7 Identify three examples of energy devices or practices that could be implemented around the home to make it more energy efficient? | | | |
| Any three suitable examples (1 mark each), for example, turning lights off when leaving the room, solar panels on the roof, improved insulation, switching off appliances that are not in use. | | | |
|  | | | /3 marks |
| 8 Give ONE advantage and TWO disadvantages of using uranium as a fuel source. | | | |
| Students answers will vary.  Advantage could include: Uranium can release very large amounts of energy / has almost zero greenhouse gas emissions. (Award 1 mark for one suitable advantage)  Disadvantages include: Radioactive waste products are produced / waste needs to be safely stored for long periods of time / nuclear accidents can take place that cause widespread damage / long exposure to radiation is harmful to humans / wastes remain radioactive for long periods of time / is a non-renewable resource. (Award 1 mark for each suitable advantage, up to 2 marks.) | | | |
|  | /3 marks | | |
| 9 Is soil a renewable or non-renewable resource? Explain your answer. | | | |
| It is non-renewable (1 mark).  Valid explanation (1 mark).  Examples: There is only a finite amount of soil on Earth / it can only be replenished through the erosion of rocks / process of creating soil is too slow to be considered renewable. | | | |
|  | | /2 marks | |
|  | | Section II  Total marks:  /12 marks | |

Section III: Extended-response questions

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| 10 Imagine you are an environmental engineer. Your task is to look at a location and decide the best type of renewable energy that could harness the resources of that location. What sort of environmental factors would influence your decision? Explain your answer. | |
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| Students’ answers will vary.  Should include the weather of the area – windy, sunny, etc. (1 mark), and the terrain – mountainous with good rainfall (for hydro) (1 mark) or near the sea (for tidal or wave power) (1 mark). | |
|  | /3 marks |

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| 11 Discuss the similarities and differences between the use of coal and geothermal energy in generation of electricity. | |
| Students’ answers will vary (1 mark for each idea, up to a total of 5 marks).  Similarities could include:  • Both generate heat.  • Both convert water to steam, which turns a turbine within a generator.  • Both are used in Australia to generate electricity.  Differences could include:  • Coal is a non-renewable resource while geothermal is renewable.  • Humans are needed to mine, crush and burn the coal whereas geothermal energy naturally produces steam from the Earths’ surface.  • Geothermal is isolated to regions when magma is closer to the Earths’ surface.  • Coal creates greenhouse gases.  • Coal makes up the majority of Australia’s electricity production while geothermal accounts for very little. | |
|  | /5 marks |
|  | Section III  Total marks:  /8 marks |