**Gravity**

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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: 11 marks  Section III: Extended-response questions: 9 marks  Total: 25 marks |

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

Section I: Multiple-choice questions

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| For each question, circle or highlight the correct answer.  1 If a brick has a mass of 1 kg on Earth, it will have: | |  |
| A | A mass of 1 kg on the Moon |
| B | A weight of 19.6 N on the Earth |
| C | A mass of only 0.3 kg on the Moon |
| D | A weight of 9.8 N on the Moon |
| 2 The scientist most commonly regarded as having first identified gravity is: | | |
| A | Albert Einstein | |
| B | Galileo Galilei | |
| C | Isaac Newton | |
| D | Nicolas Copernicus | |
| 3 High and low tides are caused by | | |
| A | The gravitational pull of the Earth on the oceans of the Moon | |
| B | The gravitational pull of the Sun on the Moon. | |
| C | The gravitational pull of the Moon on the oceans of Earth | |
| D | The gravitational pull of the Sun on the oceans of Earth | |
| 4 The Earth’s gravity is a force that attracts: | | |
| A | Objects to the North and South Poles | |
| B | Objects towards the surface of the Earth | |
| C | Objects to the moon’s surface | |
| D | Objects towards the centre of the Earth | |

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| 5 When comparing the Moon and the Earth, it is true to say that a person will have a greater weight on: | |
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| A | the Earth than on the Moon, because the Moon’s gravity is greater than the Earth’s. |
| B | the Earth than on the Moon, because the Earth’s gravity is greater than the Moon’s |
| C | the Moon than on the Earth, because the Moon’s gravity is greater than the Earth’s. |
| D | the Moon than on the Earth, because the Earth’s gravity is greater than the Moon’s. |

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|  | Section I  Total marks:  /5 marks |

Section II: Short-answer questions

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| 6 Explain why the mass of the brick remains the same both on Earth and the Moon, yet the brick’s weight changes. | |
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| 7 “There is no gravity on the International Space Station, which is why the astronauts float.” Explain why this statement is incorrect. | |
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|  | /2 marks |

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| 8 Write the following in decreasing order of height:  spring high tide; spring low tide; neap high tide; neap low tide; high tide; low tide | | |
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| 9 Explain why neap tides are lower than normal high tides. | | |
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|  | | /2 marks |
| 10 Explain why the Moon has a greater influence on the tides than the Sun. | | |
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|  | Section II  Total marks:  /11 marks | |

Section III: Extended-response questions

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| 12 A skydiver jumps out of a plane and opens their parachute to slow their fall. Identify the forces involved and decide which force is stronger. Justify your decision. | |
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| 13 Imagine you’ve been asked to design an experiment to compare the gravity on Earth with that on the Moon. Write a method for your experiment and make a prediction about the likely results. | |
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|  | Section III  Total marks:  /9 marks |