

INDIAN SCHOOL MUSCAT

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| NAME OF THE EXAMINATION | SECOND PERIODIC TEST | CLASS: IX |
| DATE OF EXAMINATION | 19-12-2022 | SUBJECT: PHYSICS |
| TYPE | MARKING SCHEME | |

| SET | Q.NO | VALUE POINTS | MARK |
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| A | 1. | The value of gravitational constant G is always constant everywhere on the earth and the moon also that is $G=6.67 \times 10^{-11} \text{ N-m}^2\text{kg}^{-2}$. | 1 |
| A | 2. | Weight of the body varies with altitude. Weight decreases as the acceleration due to gravity decreases thus weight decreases with increasing altitude. Mass of an object remains constant with altitude. | 1 |
| A | 3. | The acceleration produced in a freely falling body, irrespective of its mass, is 9.8m/s^2 . | 1 |
| A | 4. | Weight of the stone = Gravitational force acting on it = 20 N Weight, $W=m \times g$ $20=m \times 10$ $m = 2 \text{ kg}$ | 2 |
| A | 5. | Applications of the universal law of gravitation: The universal law of gravitation helps in discovering new stars and planets. The universal law of gravitation helps in determining the accurate mass of the sun, the earth, and the moon. It uses this to calculate the force or pull of gravity of the planets in the universe. It is also used in calculating the trajectory of astronomical bodies and predicting their motion It pulls all the objects towards the earth. | 2 |

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| B | 1. | The weight of a body is directly proportional to its mass. It also depends on the acceleration due to gravity which varies from place to place. | 1 |
| B | 2. | Its weight will be zero as value of g is zero at the centre of the earth. | 1 |
| B | 3. | The acceleration produced in a freely falling body, irrespective of its mass, is 9.8m/s^2 . | 1 |
| B | 4. | Applications of the universal law of gravitation: The universal law of gravitation helps in discovering new stars and planets. The universal law of gravitation helps in determining the accurate mass of the sun, the earth, and the moon. It uses this to calculate the force or pull of gravity of the planets in the universe. It is also used in calculating the trajectory of astronomical bodies and predicting their motion It pulls all the objects towards the earth. | 2 |
| B | 5. | The weight of an object on the moon is about one-sixth of its weight on the earth. This is because the value of acceleration due to gravity on the moon is about one-sixth of that on the earth. | 2 |
| C | 1. | The acceleration produced in a freely falling body, irrespective of its mass, is 9.8m/s^2 . | 1 |
| C | 2. | The value of gravitational constant G is always constant everywhere on the earth and the moon also that is $G=6.67\times 10^{-11}\text{ N-m}^2\text{kg}^{-2}$. | 1 |
| C | 3. | Weight of the body varies with altitude. Weight decreases as the acceleration due to gravity decreases thus weight decreases with increasing altitude. Mass of an object remains constant with altitude. | 1 |
| C | 4. | The weight of an object on the moon is about one-sixth of its weight on the earth. This is because the value of acceleration due to gravity on the moon is about one-sixth of that on the earth. | 2 |
| C | 5. | Applications of the universal law of gravitation: The universal law of gravitation helps in discovering new stars and planets. The universal law of gravitation helps in determining the accurate | 2 |

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| | | <p>mass of the sun, the earth, and the moon.</p> <p>It uses this to calculate the force or pull of gravity of the planets in the universe.</p> <p>It is also used in calculating the trajectory of astronomical bodies and predicting their motion</p> <p>It pulls all the objects towards the earth.</p> | |
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