**NYS Regents Physics, June 2014 (N = 8089)**

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| ***Standard*** | ***Performance Indicator*** | ***Item*** | ***Difficulty*** |
| 4.1 Transmission of Energy | 4.1b Energy may be converted among mechanical, electromagnetic, nuclear, and thermal forms.  | 15 | 65.69% |
| 4.1 Transmission of Energy | 4.1c Potential energy is the energy an object possesses by virtue of its position or condition. . .  | 19 | 75.67% |
| 4.1 Transmission of Energy | 4.1d Kinetic energy is the energy an object possesses by virtue of its motion.  | 31 | 70.56% |
| 4.1 Transmission of Energy | 4.1f In a non-ideal mechanical system, as mechanical energy decreases. . .  | 42 | 48.71% |
| 4.1 Transmission of Energy | 4.1g When work is done on or by a system, there is a change in the total energy of the system.  | 13 | 77.41% |
| 4.1 Transmission of Energy | 4.1g When work is done on or by a system, there is a change in the total energy of the system.  | 48 | 66.94% |
| 4.1 Transmission of Energy | 4.1i Power is the time rate at which work is done or energy is expended. | 50 | 66.24% |
| 4.1 Transmission of Energy | 4.1j Energy may be stored in electric\* or magnetic fields. This energy may be. . .  | 12 | 70.71% |
| 4.1 Transmission of Energy | 4.1k Moving electric charges produce magnetic fields. The relative motion between. . .  | 11 | 69.65% |
| 4.1 Transmission of Energy | 4.1k Moving electric charges produce magnetic fields. The relative motion between. . .  | 22 | 84.98% |
| 4.1 Transmission of Energy | 4.1m The factors affecting resistance in a conductor are length, cross-sectional area, . . . | 14 | 91.62% |
| 4.1 Transmission of Energy | 4.1p Electrical power and energy can be determined for electric circuits. . .  | 39 | 56.45% |
| 4.1 Transmission of Energy | 4.1p Electrical power and energy can be determined for electric circuits. . .  | 40 | 67.35% |
| 4.3 Wavelength and Frequency | 4.3b Waves carry energy and information without transferring mass. . .  | 21 | 93.04% |
| 4.3 Wavelength and Frequency | 4.3c The model of a wave incorporates the characteristics of amplitude, wavelength. . .  | 18 | 68.57% |
| 4.3 Wavelength and Frequency | 4.3c The model of a wave incorporates the characteristics of amplitude, wavelength. . .  | 20 | 92.76% |
| 4.3 Wavelength and Frequency | 4.3c The model of a wave incorporates the characteristics of amplitude, wavelength. . .  | 23 | 88.89% |
| 4.3 Wavelength and Frequency | 4.3c The model of a wave incorporates the characteristics of amplitude, wavelength. . .  | 34 | 91.00% |
| 4.3 Wavelength and Frequency | 4.3c The model of a wave incorporates the characteristics of amplitude, wavelength. . .  | 35 | 65.81% |
| 4.3 Wavelength and Frequency | 4.3e Waves are categorized by the direction in which particles in a medium vibrate. . .  | 17 | 76.85% |
| 4.3 Wavelength and Frequency | 4.3f Resonance occurs when energy is transferred to a system at its natural frequency.  | 27 | 91.58% |
| 4.3 Wavelength and Frequency | 4.3h When a wave strikes a boundary between two media, reflection, transmission. . .  | 49 | 49.68% |
| 4.3 Wavelength and Frequency | 4.3j The absolute index of refraction is inversely proportional to the speed of a wave.  | 41 | 50.20% |
| 4.3 Wavelength and Frequency | 4.3k All frequencies of electromagnetic radiation travel at the same speed in a vacuum.  | 24 | 83.47% |
| 4.3 Wavelength and Frequency | 4.3m When waves of a similar nature meet, the resulting interference may be explained. . .  | 25 | 82.05% |
| 4.3 Wavelength and Frequency | 4.3n When a wave source and an observer are in relative motion, the observed frequency. . .  | 26 | 63.84% |
| 5.1 Patterns of Motion | 5.1a Measured quantities can be classified as either vector or scalar.  | 01 | 82.58% |
| 5.1 Patterns of Motion | 5.1d An object in linear motion may travel with a constant velocity or with acceleration.  | 02 | 80.41% |
| 5.1 Patterns of Motion | 5.1d An object in linear motion may travel with a constant velocity or with acceleration.  | 07 | 90.65% |
| 5.1 Patterns of Motion | 5.1e An object in free fall accelerates due to the force of gravity. . .  | 04 | 81.90% |
| 5.1 Patterns of Motion | 5.1e An object in free fall accelerates due to the force of gravity. . .  | 06 | 65.74% |
| 5.1 Patterns of Motion | 5.1f The path of a projectile is the result of the simultaneous effect of the horizontal and . . . | 03 | 82.24% |
| 5.1 Patterns of Motion | 5.1g A projectile's time of flight is dependent upon the vertical component of its motion.  | 05 | 53.76% |
| 5.1 Patterns of Motion | 5.1h The horizontal displacement of a projectile is dependent upon. . .  | 47 | 66.23% |
| 5.1 Patterns of Motion | 5.1i According to Newton's First Law, the inertia of an object is directly proportional. . .  | 16 | 87.65% |
| 5.1 Patterns of Motion | 5.1i According to Newton's First Law, the inertia of an object is directly proportional. . . | 44 | 76.47% |
| 5.1 Patterns of Motion | 5.1k According to Newton's Second Law, an unbalanced force causes a mass to accelerate. | 08 | 54.46% |

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| ***Standard*** | ***Performance Indicator*** | ***Item*** | ***Difficulty*** |
| 5.1 Patterns of Motion | 5.1n Centripetal force is the net force which produces centripetal acceleration. . .  | 38 | 73.66% |
| 5.1 Patterns of Motion | 5.1n Centripetal force is the net force which produces centripetal acceleration. . .  | 45 | 85.52% |
| 5.1 Patterns of Motion | 5.1p The impulse imparted to an object causes a change in its momentum  | 09  | 62.22% |
| 5.1 Patterns of Motion | 5.1p The impulse imparted to an object causes a change in its momentum  | 10  | 54.36% |
| 5.1 Patterns of Motion | 5.1t Gravitational forces are only attractive, whereas electrical and magnetic forces can. . .  | 32  | 78.23% |
| 5.1 Patterns of Motion | 5.1u The inverse square law applies to electrical and gravitational fields. . .  | 33  | 54.33% |
| 5.3 Energy Relationships | 5.3b Charge is quantized on two levels. On the atomic level. . .  | 37  | 58.61% |
| 5.3 Energy Relationships | 5.3c On the atomic level, energy is emitted or absorbed in discrete packets called photons.  | 43  | 64.52% |
| 5.3 Energy Relationships | 5.3d The energy of a photon is proportional to its frequency.  | 46  | 68.69% |
| 5.3 Energy Relationships | 5.3g The Standard Model of Particle Physics has evolved. . .  | 28  | 75.03% |
| 5.3 Energy Relationships | 5.3g The Standard Model of Particle Physics has evolved. . .  | 29  | 78.02% |
| 5.3 Energy Relationships | 5.3j The fundamental source of all energy in the universe is the conversion of mass into energy.  | 30  | 61.08% |
| Standard  | I3 The grouping of magnitudes of size, time, frequency, and pressures or other units of measurement. | 36 | 56.36% |