

A Mechanics

	Multiple Choice	Long Quest	Essay
Projectile	90(4), 93(4), 94(6), 97(3), 98(6),01(3)	96(1a),00(1)	
Relative velocity	90(2), 90(5)		
Kinematics, dynamics and momentum	91(1, 2, 3, 4), 92(1, 2, 3), 93(1, 3), 94(1, 2, 4), 95(1, 3), 96(1, 2, 4, 5, 6), 97(1, 2, 6), 98(1, 3, 4, 5), 99(1,2,3,4),00(1,2,4,5),01(2,5),02(1,2,6,7)	94(1a),00(2a-d)	92(1ab), 95(1a), 97(1a), 99(1),00(1), 01(1),02(1)
Work and energy	90(3), 94(7), 95(2),99(5,6,9),00(6,7),02(4)		91(1a),00(1c)
Moments and equilibrium	94(3), 95(4, 8),00(3),0191),02(5)		
Center of mass	93(5), 94(10)		
Circular motion	90(6), 91(6), 93(8), 94(5), 95(5, 6), 96(7), 97(4, 5), 98(7), 99(8),00(8,11),01(8),02(8)	01(1)	90(6), 94(1a), 96(1)
SHM	90(7), 91(5, 8), 92(4), 93(6, 7), 94(8), 95(7), 96(10), 97(8, 9), 98(8, 11),00(10,12,13) 01(6,7),02(9,10)	94(1b), 95(1), 97(1), 98(2), 99(7),00(2e) 0192),02(1)	90(1), 92(6a), 93(6), 95(1b), 98(1)
Damped HM	94(9)		
Forced oscillation	91(7), 96(9), 98(9),00(15)		02(3)
Moment of inertia	93(9), 96(8)	92(7), 96(6)	91(1bd), 94(1b)
Torque and angular acceleration	95(9), 97(7),01(9),02(11)	98(10)	
Angular momentum	91(9), 92(6, 7),00(14),01(10)		94(1c)
Rolling down an incline	93(2)		91(1c), 94(1d)

B Wave Motion

	Multiple Choice	Long Quest	Essay
Wave propagation	90(15, 17), 93(24), 94(14, 23), 96(11), 97(11), 98(2, 10, 13),00(16),02(13)	01(7)	92(3),01(2a)
Longitudinal traveling wave	92(20), 95(12),00(17)	99(2a)	96(2a)
Doppler effect	90(24), 93(26), 94(19), 95(18), 94(14),99(14), 00(18),01(18),02(18,19)	92(9), 96(3), 97(2c),99(6)	
Reflection	90(22), 94(15), 97(12)	02(2a)	
Refraction	90(16), 95(13), 96(12), 97(13), 98(14)	98(3)	
Huygens' principle			94(2a),00(2a)

Polarization	90(25), 91(23), 92(24, 25), 93(22), 94(17), 96(13), 96(17), 98(15),01(17),02(14)	95(3), 97(6a)	95(3ab) 01(2bii)
Beats	94(16), 96(20)		93(2bc)
Decibel	90(18), 91(24), 92(21), 93(25), 95(19),99(15),01(15)		
Ultrasound	91(26)		
Stationary waves	91(27), 92(23), 93(27), 94(18, 20), 95(22), 97(16), 98(16),02(17)	95(7), 97(3b) 01(3),02(2b)	90(3ab), 93(2a), 99(2a)
Kundt's tube			96(2c)
Superposition	90(19), 91(25),01(12)		01(2c)
Interference of radio waves/ microwaves/light		01(6)	91(3b), 94(2bc)02(2ab)
Interference of light (2 slits)	95(14), 97(15),99(12),01(13)		00(2b),01(2bi)
Interference of light (thin film, Newton's ring)	91(20), 91(22), 92(26), 95(15), 96(14), 97(17), 00(19),01(14)	90(9), 93(8)	98(2c)
Interference of sound	90(23), 92(22)	99(2b)	96(2b),02(2b)
Water waves, ripple tank	99(13)		
Multiple slits, grating and spectrometer	91(21, 24), 96(15), 97(19), 98(12),02(15)	94(6),00(9a)	91(3c), 95(5a), 97(2a)
Diffraction	90(26)	97(2b)	91(3a)
EM Spectrum	01(11)	00(9b)	
Lens and mirror	92(16, 17), 94(21), 95(17), 96(18, 19), 97(18), 99(10),00(20),01(16),02(16)		
Magnifying glass	93(23)		
Microscope		94(2)	
Telescope	90(20), 91(28), 92(18), 95(16),99(11)	02(5)	98(2ab)

C. Fields, Electricity & Electromagnetism

	Multiple Choice	Long Quest	Essay
Inverse square law	99(31)		
Gravitation	92(5), 93(10, 11, 12), 94(11), 95(10, 11), 96(3), 97(10), 98(17),99(18),00(9),01(19),02(12)	90(7), 91(7), 93(7), 94(3), 98(1),99(9),02(6)	95(1c), 97(1b)
Electrostatics (elementary)	90(27), 95(26),01(20)		

Electric field lines and potential	90(28, 29), 91(31), 92(27), 93(28, 29, 35), 94(24, 25, 27), 95(27), 96(16, 23), 97(22, 28), 98(31),99(21),00(21,22,26),02(20)	94(7), 95(2), 97(8b), 98(4), 00(6a),02(3)	92(4a), 97(3) 01(3a)
Compare E and B	01(27),02(21)		
Current and drift velocity	97(21),99(23)		93(3ab), 96(3b)
Voltage and power	90(40), 91(32, 33), 95(30, 31), 97(25, 33), 98(18),99(20),01(22),02(25)		96(4bc)
Resistance and internal resistance	90(32), 98(19),99(17),00(24)	01(8)	99(3b)
Electrical networks	90(33), 95(23), 96(25), 98(39),99(19),00(23), 01(21),02(24)		
Electrical meters	90(34),99(16)	95(8), 97(4)	
Potentiometer, related circuits	90(35), 92(29), 93(31, 34), 96(24), 98(21)		
Galvanometer	91(37), 92(33), 94(29),01(29)		93(3c), 99(5biii), 00(3c)
Capacitors & capacitance	90(30), 91(41), 92(28), 93(30), 94(28, 30), 95(25), 96(21, 22), 97(24, 30), 98(22, 23, 24,29), 99(22,24,25),00(30),01(23,24,25),02(22,23,26)	94(4), 95(6),97(7) 00(3,6biII)	92(4b),99(3a) 01(3bc)
Reed switch	92(35),99(26)		92(4c), 95(4a)
Magnetic flux	01(26)		94(4a),01(4ai)
Magnetic force on a moving charge	93(49), 95(34), 98(26)	97(8a),99(3)	01(4aii), 02(5bii)
Magnetic force on a current	92(36), 94(31),02(29)	91(10), 96(8)	00(3b)
Crossed E & B (e/m ratio)	90(45), 94(40),00(27)		92(5c),02(5bi)
Production of B-field	91(34), 93(36), 96(26), 98(27),99(27,30,35),00(25)	00(7),01(4ai)	01(4b)
Motors & torque	90(36), 91(36), 92(34), 93(37), 95(28), 97(26), 98(30),00(28),02(30)	01(5)	90(4cd), 98(4)
Definition of ampere			90(4ab)
Hall effect	95(32)		92(5a), 94(4b) 02(4i)

Law of induction	91(35), 92(38, 40), 95(35, 39), 96(33), 97(23, 31),99(30,36),01(28),02(27,28)	90(10), 93(10), 95(4), 96(7), 98(7),00(8)	91(4a), 92(5b), 94(4c), 96(4a), 97(4), 98(3a), 99(5a),99(5bii) 00(5aiII) 01(4c),02(4bc)
Inductance	90(37, 38), 92(37), 94(32, 33), 96(28), 97(27), 98(20),99(29),00(31,32)	97(5),00(6bii), 01(4aii,b)	91(4b),99(5bi)
Transformer	93(39), 96(27), 97(32)		00(3a)
RMS values & reactances	91(38), 92(41, 42), 93(33), 95(41), 96(34), 97(38), 98(25),00(35)	00(6biI)	95(4b)
LRC circuits	90(31), 91(39,40), 93(42), 94(34), 95(37),96(29), 97(40), 98(28),99(32),00(33),01(30),02(31)	92(11), 94(8), 96(5),99(8),02(8)	91(4c), 93(5a) 00(4c)
Tuning circuit		97(6b)	93(5b)
LC oscillations	95(40),00(34)		00(4ab)
Smoothing circuit	96(35)		95(4c), 96(4d)
Diodes	92(39), 94(39), 95(29),00(29),02(13)		02(4aii)
Transistor	90(39), 91(43), 92(30), 92(31), 93(40), 96(31),	90(11), 95(5), 98(9)	
Op. amp	92(32), 93(41), 94(35, 36), 95(43), 96(32), 97(32, 42), 98(40),00(42),02(34),02(44)	92(10), 93(11), 94(10), 97(9), 99(4),00(10), 01(9)	
Logic gates	96(30)		

D Matter

	Multiple Choice	Long Quest	Essay
Density	99(44)		
Heat & Energy	96(37), 98(34)	92(8a)	98(3bc),99(4a), 02(2c)
Gases & 1st law of thermodynamics	90(13, 14), 91(10, 17, 18), 92(13), 93(16, 17, 18), 94(13), 95(20, 21), 97(35, 36), 98(33),99(37,38,39) 00(38,39),01(33),02(38,39)	90(8), 92(8b), 93(9), 96(4), 98(8),00(4), 01(10),02(4)	90(2ab), 95(2ac), 97(1d) 00(5aiI)
Kinetic theory of gases	91(19), 92(15), 97(37), 98(35),01(32),02(40)	94(9)	92(2a), 95(2b), 96(3a)
Solids	90(8), 91(11, 12, 15), 92(12), 93(43), 94(22), 95(33), 96(38), 97(20), 98(36),00(36),01(36,37)	96(2), 95(9b), 97(3a)	94(3ab)
Interatomic forces/p.e.	91(14), 92(8), 96(36), 98(37),00(37),01(35)	95(9),02(9)	

Fluids in motion	90(11), 93(15), 94(12), 96(40), 97(34),01(38),02(42)	91(8), 96(16), 98(6)	94(3c)
Discharge tube	90(44)		
CRT & CRO	90(42, 43), 91(42), 92(43), 93(38), 94(26), 95(42), 98(38),99(41),01(31)		90(5bc), 96(5)
Measurement of e		91(12ab)	
Models of the atom	90(46), 92(47), 93(47),01(43,45)		96(3c),02(5a)
Scattering of a-particle	00(43)		
Radioactivity	90(48), 91(48), 92(45), 93(48), 94(41, 44, 45), 95(44), 96(41, 43, 44), 97(43), 98(32, 41, 43), 99(42,43),99(5),00(44),01(42),02(41)	93(12a), 95(10), 97(10),00(5)	91(5), 92(1cii), 97(5),99(4b), 01(5c),02(5c)
Nuclear reactions	92(48),00(45)		
Nuclear binding energy	94(42), 98(44),01(44)	90(12a)	94(5a),00(5b)
Fission and fusion	91(49), 92(44), 97(44), 98(45)	90(12), 93(12b), 98(5),02(7b)	94(5bc),00(5c)
Photoelectric effect	90(47), 91(44), 91(45), 92(46), 94(37), 95(36), 96(42), 97(39),99(40),00(41),01(39),02(35)	92(12), 96(9)	93(4), 98(5ab), 00(2c),01(5c)
Franck-Hertz experiment	90(50)	91(11), 96(10)	92(1ci)
Energy levels in atoms	90(49), 91(47), 93(44), 94(38), 95(38), 96(39), 97(41), 98(42),99(33,34),00(40),01(40),02(37)	00(9cd)	01(5ab)
Spectra	93(45)		95(5b), 97(2bc)
X-rays	91(46), 93(46),02(32)	94(5)	95(5c), 98(5c)
Lasers			95(3c),02(3c)

Graph and Error

	Multiple Choice	Long Quest	Essay
Errors	90(1), 92(50), 93(50), 94(37), 95(45), 96(45), 97(45),99(45),02(45)	99(1)	
Graphs	94(43), 95(24), 97(29)		