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PHYSICS TEST – CHAPTER 1: PHYSICAL QUANTITIES & MEASUREMENTS

Name:		Roll No.		Section:

Total Time: 2:30 Hour
Time Allowed: 150 Minutes

Total Marks: 150

PAPER OBJECTIVE
SECTION-A (MARKS 150)

NOTE: Section-A is compulsory. All parts of this section are to be answered on these pages and handed over to the center superintendent. Deleting / overwriting is not allowed. Do not use lead pencil.

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

Questions	A	B	C	D	A B C D
1. Observations that have no associated numbers are called:	quantitative observations	qualitative observations	measurements	estimations	○●○○
2. Qualitative observations deal with facts that can be observed through our:	calculators	measuring instruments only	five senses	formulas	○○●○
3. A quantitative observation includes numbers and is also called a:	sensation	texture	measurement	shape	○○●○
4. Which of the following is an example of a qualitative observation?	Water keeps its level	Mass is 5 kg	Speed is 20 m/s	Pressure is 100 Pa	●○○○
5. A student writes: 'The rod is rough and red.' This observation is:	qualitative	quantitative	a measurement	an estimation	●○○○
6. A student records: 'The rod is 2.5 m long and has a mass of 3 kg.' This is:	qualitative	sensory only	quantitative	always inaccurate	○○●○
7. Which statement is a quantitative observation?	The car looks shiny	A car covers 120 m in 10 s	The engine smells of oil	The road feels rough	○●○○
8. Which statement is a qualitative observation?	The stone falls in 2 s	The stone has a mass of 2 kg	The stone has a round shape	The stone is 5 cm wide	○○●○
9. An estimation is:	guessing a formula at random	picking any number at random	a rough educated guess of a physical quantity using prior experience and sound reasoning	an exact value with zero error	○○●○
10. Estimation usually includes identification of:	exact values of all variables	a random formula	only the final answer	correct physical principles and a good guess about relevant variables	○○○●
11. To estimate the thickness of one sheet of paper, we:	multiply the stack thickness by the number of pages	weigh a single page	find the thickness of a stack and divide by the number of pages	count the words on it	○○●○
12. To estimate the height of a building, a student first counts the floors. The next step is to:	estimate the height of a single floor	estimate the mass of the building	count the rooms	measure its shadow	●○○○
13. A building has 10 floors and each floor is about 3 m high. Its estimated height is:	13 m	30 m	3 m	300 m	○●○○
14. A building has 8 floors, each about 3 m high. Its estimated height is:	11 m	24 m	8 m	240 m	○●○○

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Questions	A	B	C	D	A B C D
15. A stack of 400 sheets is 4 cm thick. The estimated thickness of one sheet is:	0.1 cm	0.01 cm	1 cm	0.001 cm	○●○○
16. To estimate the volume of a complex object, a student first:	measures its time period	guesses a random number	introduces a simple model such as a sphere or a box	uses its charge	○○●○
17. To estimate the mass of an object from its volume, we first need an estimate of its average:	time period	density	charge	speed	○●○○
18. According to the text, mass is equal to:	density ÷ volume	volume ÷ density	density × volume	density + volume	○○●○
19. The density of air is about:	10^3 kg/m³	10^4 kg/m³	10^{-3} kg/m³	1 kg/m³	○○○●
20. The density of water is about:	10^3 kg/m³	1 kg/m³	10^4 kg/m³	10^6 kg/m³	●○○○
21. A room has a volume of 60 m³. Taking the density of air as 1 kg/m³, the estimated mass of air is:	6 kg	600 kg	60 kg	6000 kg	○○●○
22. A tank holds 2 m³ of water. Taking the density of water as 10^3 kg/m³, its estimated mass is:	200 kg	2000 kg	20 kg	2 kg	○●○○
23. A solid object floats on water. Its density is estimated to be:	more than 10^4 kg/m³	less than 10^3 kg/m³	exactly 10^4 kg/m³	equal to 10^6 kg/m³	○●○○
24. Example 1.1: A man of mass 70 kg climbs 3 m. Energy required (g = 10 m/s²) is:	210 J	700 J	2100 J	21000 J	○○●○
25. A boy of mass 50 kg climbs to the first floor 4 m above. Energy needed (g = 10 m/s²) is:	2000 J	200 J	500 J	20000 J	●○○○
26. A woman of mass 60 kg climbs two floors, a total height of 6 m. Energy needed (g = 10 m/s²) is:	360 J	3600 J	600 J	60 J	○●○○
27. The energy required to walk up a staircase is estimated using:	mgh	mg/h	m/gh	gh/m	●○○○
28. According to Table 1.1, the diameter of a proton is:	10^{-14} m	10^{-10} m	10^{-15} m	10^{-7} m	○○●○
29. According to Table 1.1, the mass of an electron is:	10^{-27} kg	10^{-15} kg	10^{-30} kg	10^{-5} kg	○○●○
30. According to Table 1.1, the mass of a proton is:	10^{-27} kg	10^{-30} kg	10^{-15} kg	10^{-2} kg	●○○○
31. According to Table 1.1, the mass of the Sun is:	10^{25} kg	10^{53} kg	10^{19} kg	10^{30} kg	○○○●

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Questions	A	B	C	D	A B C D
32. According to Table 1.1, the age of the universe is:	10^{17} s	10^{18} s	10^{11} s	10^{9} s	○●○○
33. According to Table 1.1, one light-year is about:	10^{16} m	10^{13} m	10^{21} m	10^{26} m	●○○○
34. According to Table 1.1, the time period of visible light is:	10^{-22} s	10^{-13} s	10^{-3} s	10^{-15} s	○○○●
35. Estimating heartbeats in a lifetime: human lifetime is 10^{9} s and one heartbeat takes 1 s. The estimate is:	10^{7} beats	10^{11} beats	10^{9} beats	10^{5} beats	○○●○
36. A bacterium has mass 10^{-15} kg and a proton 10^{-27} kg. The number of protons in a bacterium is about:	10^{42}	10^{15}	10^{-12}	10^{12}	○○○●
37. The Sun's diameter is about 10^{9} m and a hydrogen atom's is 10^{-10} m. Hydrogen atoms across the Sun:	10^{9}	10^{10}	10^{29}	10^{19}	○○○●
38. How many viruses (10^{-7} m each) placed side by side span a pinky fingernail (10^{-2} m)?	10^{9}	10^{-5}	10^{2}	10^{5}	○○○●
39. How many protons (10^{-15} m each) in a row span a large nucleus (10^{-14} m)?	10	10^{2}	1	10^{-1}	●○○○
40. How many hydrogen atoms (10^{-10} m) fit across a typical virus (10^{-7} m)?	10^{-3}	10^{17}	10^{7}	10^{3}	○○○●
41. How many 4-year-old children (1 m tall) lying head to toe equal a football ground (10^{2} m)?	10^{2}	10^{0}	10^{-2}	10^{4}	●○○○
42. Using Table 1.1, the mass of the Earth divided by the mass of the Moon is about:	10^{47}	10^{-3}	10^{3}	10^{5}	○○●○
43. Using Table 1.1, the Sun is about how many times heavier than the Earth?	10^{60}	10^{5}	10^{-5}	10^{3}	○●○○
44. How many mosquitoes (10^{-5} kg) equal the mass of one hummingbird (10^{-2} kg)?	10^{7}	10^{-3}	10^{2}	10^{3}	○○○●
45. About how many litres of water (1 kg each) equal the mass of a motorcycle (10^{2} kg)?	10	1000	100	0.01	○○●○
46. How many nerve impulses (10^{-3} s each) fit into one heartbeat (10^{0} s)?	10^{-3}	10^{6}	10^{0}	10^{3}	○○○●
47. Visible light has a time period of 10^{-15} s. Periods in one nerve impulse (10^{-3} s) number:	10^{-18}	10^{12}	10^{18}	10^{-12}	○●○○
48. A supercomputer works at 1 PFlops (10^{15} operations per second). With one day = 10^{5} s, operations in a day:	10^{10}	10^{20}	10^{15}	10^{-10}	○●○○

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Questions	A	B	C	D	A B C D
49. Using Table 1.1, the age of the universe is about how many times the age of the Earth?	10^{35}	10^{-1}	10	10^{2}	○○●○
50. Using Table 1.1, recorded human history is about how many times a human lifetime?	10^{20}	10^{-2}	10^{2}	10^{4}	○○●○
51. Derived units are obtained by:	adding base units	multiplying or dividing base units	subtracting base units	averaging base units	○●○○
52. In base units, 1 joule is equal to:	kg m^2 s^{-2}	kg m s^{-2}	kg m^2 s^{-3}	kg m^{-1} s^{-2}	●○○○
53. In base units, 1 coulomb is equal to:	A s	A s^{-1}	kg A s	A m	●○○○
54. An engineer writes power = work/time. The watt in base units is:	kg m^2 s^{-3}	kg m^2 s^{-2}	kg m s^{-2}	kg m^{-1} s^{-2}	●○○○
55. A technician uses pressure = force/area (N m^{-2}). The pascal in base units is:	kg m s^{-2}	kg m^2 s^{-2}	kg m^{-2} s^{-2}	kg m^{-1} s^{-2}	○○○●
56. A student writes Force = mass × displacement/time² and puts in SI units. The result for N is:	kg × s^2/m	kg × m^2/s	kg × m/s^2	kg/(m s^2)	○○●○
57. A current of 2 A flows for 3 s. Using coulomb = A s, the charge carried is:	5 C	1.5 C	6 C	0.67 C	○○●○
58. Dimension of a physical quantity denotes its:	numerical value	qualitative nature	exact error	unit prefix	○●○○
59. The dimension of a physical quantity is written as a capital letter enclosed in:	square brackets	round brackets	curly braces	inverted commas	●○○○
60. The dimension of electric current is:	[J]	[I]	[N]	[θ]	○●○○
61. The dimensions of area, volume, velocity and acceleration respectively are:	[L^3], [L^2], [LT^{-1}], [LT^{-2}]	[L^2], [L^3], [LT^{-1}], [LT^{-2}]	[L^2], [L^3], [LT^{-2}], [LT^{-1}]	[L], [L^2], [LT^{-1}], [LT^{-2}]	○●○○
62. Force, weight and tension have the same dimensions, but which has a different one?	modulus of elasticity	force	weight	tension	●○○○
63. Length, width, height, distance, displacement and radius have the same dimensions because they:	have the same magnitude	have the same nature	use different units	are all vectors	○●○○
64. The dimensions of force (mass × acceleration) are:	[ML^2T^{-2}]	[MLT^{-1}]	[$ML^{-1}T^{-2}$]	[MLT^{-2}]	○○○●
65. The dimensions of work (force × displacement) are:	[MLT^{-2}]	[ML^2T^{-2}]	[ML^2T^{-3}]	[$ML^{-1}T^{-2}$]	○●○○

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Questions	A	B	C	D	A B C D
66. The dimensions of pressure (force/area) are:	$[ML^{-1}T^{-2}]$	$[MLT^{-2}]$	$[ML^{2}T^{-2}]$	$[ML^{-2}T^{-2}]$	● ○ ○ ○
67. The dimensions of electric charge (coulomb = A s) are:	[I/T]	$[IT^{-1}]$	[MIT]	[IT]	○ ○ ○ ●
68. From E = hf with E = $[ML^{2}T^{-2}]$ and f = $[T^{-1}]$, the dimensions of Planck's constant h are:	$[ML^{2}T^{-3}]$	$[ML^{2}T^{-1}]$	$[ML^{2}T]$	$[MLT^{-1}]$	○ ● ○ ○
69. The dimensions of the universal gravitational constant are:	$[ML^{3}T^{-2}]$	$[M^{-1}L^{3}T^{2}]$	$[M^{-1}L^{3}T^{-2}]$	$[M^{-3}L^{3}T^{-2}]$	○ ○ ● ○
70. A quantity has dimensions $[L^{a}M^{b}T^{-c}]$. Which pairing is correct?	force, if a = –1, b = 0, c = –2	pressure, if a = –1, b = 1, c = –2	acceleration, if a = 1, b = 1, c = –2	velocity, if a = 1, b = 0, c = 1	○ ○ ○ ●
71. Quantities that have dimensions and variable magnitude are called:	dimensional constants	dimensionless variables	dimensionless constants	dimensional variables	○ ○ ○ ●
72. Quantities that have dimensions and constant magnitude are called:	dimensional variables	dimensionless variables	dimensionless constants	dimensional constants	○ ○ ○ ●
73. Which of the following is a dimensional variable?	strain	π	velocity	Planck's constant	○ ○ ● ○
74. Which of the following is a dimensional constant?	speed of light in vacuum	strain	plane angle	coefficient of friction	● ○ ○ ○
75. Which of the following is a dimensionless variable?	Planck's constant	force	energy	strain	○ ○ ○ ●
76. Which of the following is a dimensionless constant?	speed of light	gravitational constant	ideal gas constant	π	○ ○ ○ ●
77. Which pair consists of dimensional constants?	π and e	Planck's constant and gravitational constant	strain and plane angle	force and energy	○ ● ○ ○
78. Which pair consists of dimensionless variables?	π and e	force and energy	plane angle and solid angle	h and G	○ ○ ● ○
79. In $v_f = v_i + at$, the sum on the right becomes $2[LT^{-1}]$. The number 2 is a:	dimensionless constant	dimensional variable	dimensional constant	dimensionless variable	● ○ ○ ○
80. The principle of homogeneity of dimensions says that:	both sides of a physical equation have the same dimensions	both sides have the same magnitude	different dimensions can be added	only the right side has dimensions	● ○ ○ ○
81. Quantities can be added or subtracted only if they have the same:	numbers	signs	dimensions	names	○ ○ ● ○
82. To test $v_f = v_i + at$, a student finds the dimensions of 'at' as:	$[LT^{-2}]$	$[LT^{-3}]$	$[LT^{-1}]$	$[L^{2}T^{-1}]$	○ ○ ● ○

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83. A student uses P = ρgh. The dimensions of ρgh are [ML⁻³][LT⁻²][L] =	[MLT⁻²], same as force	[ML²T⁻²], same as work	[ML⁻³T⁻²]	[ML⁻¹T⁻²], same as pressure	○○○●
84. Which expression is dimensionally consistent with acceleration (x distance, t time, v velocity)?	v/t²	v²/x	v/x²	v²/t	○●○○
85. The dimensions of v²/(ax) are:	[L]	[T]	dimensionless	[LT⁻¹]	○○●○
86. The dimensions of at²/2 are:	[L]	[LT⁻¹]	[T]	dimensionless	●○○○
87. Which formula may be valid for the speed v of ocean waves (λ wavelength, g gravity)?	v = ρgh	v = √(λg)	v = gh/λ	v = λgh	○●○○
88. Dimensional analysis shows the wavelength of matter waves (h, m, v) varies as:	λ ∝ mv/h	λ ∝ hmv	λ ∝ hv/m	λ ∝ h/(mv)	○○○●
89. In λ = (constant) $h^a m^b v^c$, the powers a, b and c come out as:	1, –1, –1	1, 1, 1	–1, 1, 1	1, –1, 1	●○○○
90. In deriving the time period of a simple pendulum, the power of mass m comes out as:	1	½	–½	0	○○○●
91. Dimensional analysis shows the time period of a simple pendulum is proportional to:	√(g/l)	√(l/g)	l/g	lg	○●○○
92. The mass of a pendulum bob is doubled, all else same. Its time period will:	remain the same	double	become half	become √2 times	●○○○
93. The length of a simple pendulum is made four times (T ∝ √l). Its period becomes:	two times	four times	half	unchanged	●○○○
94. The constant in the pendulum formula T = constant × √(l/g) is found by experiment and equals:	π	1	2π	π/2	○○●○
95. Dimensional analysis cannot:	determine the dimensionless constant in a formula	check homogeneity of an equation	derive a possible formula	find units of a derived quantity	●○○○
96. A quantity with dimensions [ML²T⁻²] may be work, energy or torque. This shows that dimensional analysis:	distinguishes all quantities	does not distinguish quantities having the same dimensions	gives numerical values	cannot check homogeneity	○●○○
97. A dimensionally correct relation is:	always physically correct	not always physically correct	never physically correct	always proved by experiment	○●○○
98. A dimensionally wrong equation is:	sometimes right	always wrong	always right	right if constants are added	○●○○
99. Precision refers to:	closeness of a measured value to the true value	closeness to a standard value	closeness of measured values to each other	the error of a single measurement	○○●○

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100. Accuracy refers to:	closeness of a measured value to a standard or true value	closeness of measured values to each other	the least count of the instrument	the number of readings taken	● ○ ○ ○
101. Accuracy describes how well we eliminate:	least count	mean deviation	systematic error	absolute uncertainty	○ ○ ● ○
102. The precision of a measurement is associated with the:	least count of the measuring instrument	standard value	fractional uncertainty	systematic error	● ○ ○ ○
103. The smaller the least count of an instrument, the greater its:	error	systematic error	precision	random error	○ ○ ● ○
104. Accuracy is indicated by:	fractional or percentage uncertainty	absolute uncertainty	least count	range of readings	● ○ ○ ○
105. A person weighs exactly 160.0 lb. Scale A reads 170.1, 169.9 and 170.0 lb. Scale A is:	accurate but not precise	both precise and accurate	neither precise nor accurate	precise but not accurate	○ ○ ○ ●
106. A person weighs exactly 160.0 lb. Scale B reads 161, 162 and 158 lb. Scale B is:	precise but not accurate	both precise and accurate	neither precise nor accurate	fairly accurate but not precise	○ ○ ○ ●
107. A person weighs exactly 160.0 lb. Scale C reads 159.9, 160.0 and 160.1 lb. Scale C is:	precise but not accurate	accurate but not precise	both precise and accurate	neither precise nor accurate	○ ○ ● ○
108. Arrows hit tightly grouped far from the bull's-eye centre. The shooting is:	accurate but not precise	precise and accurate	precise but not accurate	neither precise nor accurate	○ ○ ● ○
109. Arrows are scattered widely but average out around the bull's-eye centre. The shooting is:	not precise but accurate	precise but not accurate	precise and accurate	neither precise nor accurate	● ○ ○ ○
110. Three people weigh a 2.00 g standard on one balance and each reads exactly 7.32 g. The balance is:	precise but not accurate	both accurate and precise	accurate but not precise	neither accurate nor precise	● ○ ○ ○
111. The difference between the measured value and the true value is called:	precision	uncertainty	estimation	error	○ ○ ○ ●
112. According to the text, error equals:	true value − observed value	observed value − true value	observed value + true value	observed value ÷ true value	○ ● ○ ○
113. Uncertainty is:	the difference between two readings	the range of possible values within which the true value lies	an exact true value	the mean of all measurements	○ ● ○ ○
114. All measurements have uncertainty caused by:	the instrument only	instrument limitation and skill of the experimenter	the weather only	the unit chosen	○ ● ○ ○
115. Absolute uncertainty is equal to:	the true value	the percentage uncertainty	the least count of the measuring instrument	the number of readings	○ ○ ● ○
116. Fractional uncertainty is equal to:	measured value / absolute uncertainty	absolute uncertainty / measured value	absolute uncertainty × measured value	percentage uncertainty × 100	○ ● ○ ○

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117. Uncertainty in time period ΔT of a vibrating body equals:	number of vibrations / least count	least count × number of vibrations	total time / least count	least count / number of vibrations	○○○●
118. A measurement is 3.06 mm ± 0.02 mm. The true value lies between:	3.02 mm and 3.10 mm	3.06 mm and 3.08 mm	3.00 mm and 3.06 mm	3.04 mm and 3.08 mm	○○○●
119. A metre rod has a least count of 1 mm. The absolute uncertainty of a length measured with it is:	±0.1 cm	±1 cm	±0.01 cm	±0.5 cm	●○○○
120. For x ± Δx = (2.0 ± 0.1) mm, the fractional uncertainty is:	0.5	0.05	0.1	0.2	○●○○
121. For x ± Δx = (2.0 ± 0.1) mm, the percentage uncertainty is:	0.05 %	10 %	0.5 %	5 %	○○○●
122. A slab's ends coincide with 20.5 cm and 58.0 cm marks (each ±0.05 cm). Its length is:	(37.5 ± 0.05) cm	(37.5 ± 0.2) cm	(38.0 ± 0.1) cm	(37.5 ± 0.1) cm	○○○●
123. The slab length 37.5 cm ± 0.1 cm has a fractional uncertainty of about:	±0.03	±0.003	±0.3	±0.0003	○●○○
124. The mean diameter of a wire is (0.50 ± 0.02) mm. The percentage uncertainty is:	4 %	2 %	6 %	8 %	●○○○
125. Lengths (24.0 ± 0.1) cm and (30.0 ± 0.1) cm are added. The uncertainty in the sum is:	± 0.1 cm	± 0.02 cm	± 0.2 cm	± 0.4 cm	○○●○
126. In z = x/y, x has 2 % and y has 3 % uncertainty. The percentage uncertainty in z is:	5 %	1 %	6 %	1.5 %	●○○○
127. In z = xy, x has 1 % and y has 4 % uncertainty. The percentage uncertainty in z is:	4 %	3 %	1 %	5 %	○○○●
128. For z = x^3, x has a percentage uncertainty of 2 %. The percentage uncertainty in z is:	2 %	6 %	8 %	1.5 %	○●○○
129. The radius of a disc has 1 % uncertainty. The area πr² has a percentage uncertainty of:	1 %	3 %	0.5 %	2 %	○○○●
130. If A = $x^2/(y^2z)$ and x, y, z have 1 %, 1 % and 2 % uncertainty, the uncertainty in A is:	6 %	4 %	2 %	3 %	●○○○
131. Example 1.3: V = (7.3 ± 0.1) V and I = (2.73 ± 0.051) A. The resistance R = V/I is:	19.9 Ω	0.37 Ω	9.4 Ω	2.7 Ω	○○○●
132. In Example 1.3, the percentage uncertainty in V = (7.3 ± 0.1) V is about:	1 %	7 %	0.1 %	10 %	●○○○
133. In Example 1.3, the total uncertainty in R is (1 % + 2 %) =	1 %	2 %	3 %	0.3 %	○○●○

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134. R = 2.7 Ω carries a 3 % uncertainty. The absolute uncertainty in R is about:	0.3 Ω	0.08 Ω	0.03 Ω	0.8 Ω	○●○○
135. A disc radius is (2.25 ± 0.01) cm; area = 15.90 cm². The uncertainty in the area is:	0.8 cm²	0.04 cm²	0.13 cm²	1.3 cm²	○○●○
136. The radius of a circle is (10.5 ± 0.2) m. The percentage uncertainty in the radius is nearly:	0.19 %	19 %	3.8 %	1.9 %	○○○●
137. The radius of a circle is (10.5 ± 0.2) m. The percentage uncertainty in its area is nearly:	3.8 %	1.9 %	5.7 %	0.4 %	●○○○
138. The radius is (10.5 ± 0.2) m. Taking π = 3.14, the circumference is:	(65.9 ± 0.2) m	(65.9 ± 1.3) m	(65.9 ± 2.5) m	(33.0 ± 1.3) m	○●○○
139. Three readings of a radius are 1.50, 1.51 and 1.52 cm. The average is:	1.50 cm	1.52 cm	1.51 cm	1.53 cm	○○●○
140. Deviations of the readings 1.50, 1.51, 1.52 cm from their mean are 0.01, 0 and 0.01 cm. The mean deviation is:	0.007 cm	0.01 cm	0.02 cm	0.003 cm	●○○○
141. The time for 20 vibrations of a pendulum is 35.2 s. Its time period T is:	1.76 s	0.57 s	15.2 s	704 s	●○○○
142. A stopwatch has a least count of 0.1 s and 20 vibrations are timed. The uncertainty ΔT is:	0.1 s	0.005 s	0.05 s	2 s	○●○○
143. A student times 40 vibrations with a stopwatch of least count 0.1 s. The uncertainty in time period is:	0.005 s	0.01 s	0.004 s	0.0025 s	○○○●
144. Five stopwatch readings are 3.0, 3.2, 3.4, 2.8 and 3.1 s. The uncertainty (half the range) is:	±0.6 s	±3.1 s	±7.75 s	±0.3 s	○○○●
145. Five students time a falling ball: 6.2, 6.0, 6.4, 6.1 and 5.8 s. The average time is:	6.1 s	6.2 s	6.0 s	30.5 s	●○○○
146. For the readings 6.2, 6.0, 6.4, 6.1 and 5.8 s, the uncertainty (max − min)/2 is:	±0.6 s	±0.2 s	±0.3 s	±0.1 s	○○●○
147. A reaction should yield 171.9 g but yields 154.8 g. The percent error is about:	17.1 %	9.9 %	90.1 %	111 %	○●○○
148. The order of magnitude of ($10^6 + 10^3$) is:	10^9	10^{18}	10^3	10^6	○○○●
149. A resistor R = 13 Ω carries I = 3 A. Using P = I^2R, the power consumed is:	39 W	78 W	351 W	117 W	○○○●
150. A ball moves through air with resistive force F = crv. The SI base unit of c is:	kg m s^{-1}	kg m^{-1} s^{-2}	kg m s^{-2}	kg m^{-1} s^{-1}	○○○●

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