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SSC-I NATIONAL BOOK FOUNDATION FBISE

PHYSICS TEST - CHAPTER 1: PHYSICAL QUANTITIES AND MEASUREMENT

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. Quantities that can be measured are called:	Non-physical quantities	Imaginary quantities	Physical quantities	Abstract quantities	○○●○
2. Which of the following is a non-physical quantity?	Length	Mass	Time	Taste	○○○●
3. Which of the following is a physical quantity?	Feeling	Colour	Temperature	Taste	○○●○
4. Measurement is a comparison between an unknown quantity and a:	Guess	Standard	Graph	Table	○●○○
5. A measurement consists of a numerical magnitude and a:	Graph	Unit	Symbol only	Vector	○●○○
6. If a height is 1.65 m, the numerical magnitude is:	m	165	1.65	5.5	○○●○
7. The simplest physical quantities from which all others are derived are called:	Derived quantities	Vector quantities	Non-physical quantities	Base quantities	○○○●
8. Quantities obtained by multiplying or dividing base quantities are called:	Derived quantities	Base quantities	Scalar quantities	Fundamental quantities	●○○○
9. A complete set of units for all physical quantities is called a:	System of units	Table of units	Set of prefixes	Scale of units	●○○○
10. SI stands for:	Standard International	Scientific Index	Systematic Interval	System International	○○○●
11. SI is a short form of the French name:	Système international de mesure	Standard international d'unité	Système international d'unités	Système scientifique	○○●○
12. The number of base quantities in the SI system is:	5	6	7	9	○○●○
13. The SI unit of length is:	kilogram	second	kelvin	metre	○○○●
14. The SI unit of mass is:	kilogram	gram	pound	newton	●○○○

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Questions	A	B	C	D	A B C D
15. The SI unit of time is:	minute	second	hour	day	○●○○
16. The SI unit of electric current is:	volt	coulomb	ohm	ampere	○○○●
17. The SI unit of temperature is:	degree Celsius	degree Fahrenheit	joule	kelvin	○○○●
18. The SI unit of amount of substance is:	mole	gram	kilogram	candela	●○○○
19. The SI unit of light intensity is:	candela	lux	watt	lumen	●○○○
20. Which of the following is NOT an SI base unit?	newton	metre	kelvin	ampere	●○○○
21. Which of the following is a derived unit?	pascal	mole	candela	kilogram	●○○○
22. The SI unit of force is:	newton	joule	pascal	watt	●○○○
23. The SI unit of pressure is:	newton	pascal	joule	watt	○●○○
24. The SI unit of energy is:	watt	pascal	joule	newton	○○●○
25. The newton is expressed in base units as:	kg m/s²	kg m/s	kg m²/s	kg/m s²	●○○○
26. Area, obtained by multiplying length by length, is:	a derived quantity	a base quantity	a scalar base quantity	a non-physical quantity	●○○○
27. The base quantities involved in the unit of pressure are:	mass, length and time	mass and length only	length and time only	mass and time only	●○○○
28. Writing numbers in the form (1 to 10) × 10^n is called:	decimal notation	ordinary notation	scientific notation	binary notation	○○●○
29. In scientific notation, the number between 1 and 10 is called the:	exponent	base	mantissa	prefix	○○●○
30. In scientific notation, the power of 10 is called the:	exponent	mantissa	unit	prefix	●○○○
31. In 8.8 × 10^{26} m, the exponent is:	26	8.8	10	2	●○○○

Questions	A	B	C	D	A B C D
32. In 5.98×10^{24} kg, the mantissa is:	24	5.98	10	59.8	○●○○
33. The mass of the earth is about:	5.98×10^{24} g	5.98×10^{24} kg	5.98×10^{-24} kg	5.98×10^{26} kg	○●○○
34. The width of the observable universe is about:	8.8×10^{24} m	8.8×10^{-26} m	8.8×10^{26} m	8.8×10^{28} m	○○●○
35. The diameter of a hydrogen nucleus (proton) is about:	1.7×10^{-9} m	1.7×10^{15} m	1.7×10^{-15} m	1.7×10^{-12} m	○○●○
36. The number of seconds in one day in scientific notation is:	8.64×10^{4} s	8.64×10^{3} s	8.64×10^{5} s	8.64×10^{2} s	●○○○
37. The number 86400 s equals:	86.4 Ms	86.4 ks	86.4 ms	86.4 µs	○●○○
38. The standard form of 0.0008 g is:	8×10^{-3} g	8×10^{-4} g	8×10^{4} g	0.8×10^{-3} g	○●○○
39. The standard form of 149,530,000,000 m is:	1.4953×10^{10} m	1.4953×10^{12} m	14.953×10^{11} m	1.4953×10^{11} m	○○○●
40. Which of the following is in correct scientific notation?	3.4×10^{5}	34×10^{4}	0.34×10^{6}	340×10^{3}	●○○○
41. The standard form of 0.000023 s is:	2.3×10^{-5} s	2.3×10^{-4} s	2.3×10^{5} s	23×10^{-6} s	●○○○
42. The prefix kilo means:	10^{3}	10^{6}	10^{-3}	10^{9}	●○○○
43. The prefix mega means:	10^{3}	10^{-6}	10^{6}	10^{9}	○○●○
44. The prefix milli means:	10^{-3}	10^{-6}	10^{-2}	10^{3}	●○○○
45. The prefix micro means:	10^{-3}	10^{-9}	10^{-6}	10^{6}	○○●○
46. Which of the following prefixes represents the largest value?	mega	peta	kilo	pico	○●○○
47. Which of the following prefixes represents the smallest value?	nano	milli	micro	femto	○○○●
48. The symbol of the prefix micro is:	m	µ	M	n	○●○○

Questions	A	B	C	D	A B C D
49. The symbol of the prefix mega is:	m	μ	M	k	○○●○
50. The symbol for the prefix kilo is:	K	m	M	k	○○○●
51. The prefix micro is smaller than milli by a factor of:	100	1000	10	1,000,000	○●○○
52. The diameter of a proton, 1.7×10^{-15} m, can be written using a prefix as:	1.7 fm	1.7 pm	1.7 nm	1.7 μm	●○○○
53. One ton of rice (1000 kg) in grams is:	100,000 g	10,000 g	1000 g	1,000,000 g	○○○●
54. The number of kilometres in 25 micrometres is:	2.5×10^{-5} km	2.5×10^{-3} km	2.5×10^{-8} km	2.5×10^{-11} km	○○●○
55. Distance to the nearest star Alpha Centauri is conveniently expressed using the prefix:	nano	milli	peta	micro	○○●○
56. The thickness of a page of a book (4.0×10^{-5} m) is conveniently written as:	40 mm	40 μm	40 nm	40 pm	○●○○
57. 1 megawatt equals:	10^{3} W	10^{9} W	10^{-6} W	10^{6} W	○○○●
58. A physical quantity which has only magnitude with unit is called a:	vector	scalar	prefix	base quantity	○●○○
59. A physical quantity which has both magnitude and direction is called a:	scalar	constant	vector	exponent	○○●○
60. Which of the following is a scalar quantity?	Force	Weight	Mass	Velocity	○○●○
61. Which of the following is a vector quantity?	Displacement	Distance	Speed	Energy	●○○○
62. Which of the following is a scalar quantity?	Momentum	Temperature	Acceleration	Displacement	○●○○
63. Which of the following is a scalar quantity?	Weight	Energy	Force	Velocity	○●○○
64. Which of the following is a vector quantity?	Time	Mass	Speed	Momentum	○○○●
65. Which of the following is a vector quantity?	Density	Time	Temperature	Electric field strength	○○○●

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Questions	A	B	C	D	A B C D
66. Which of the following is a vector quantity?	Energy	Gravitational field strength	Mass	Distance	○●○○
67. Which of the following is a scalar quantity?	Velocity	Speed	Acceleration	Displacement	○●○○
68. Time is a scalar quantity because it:	has direction only	has no unit	is a vector	has magnitude only	○○○●
69. A vector is represented graphically by:	an arrow	a circle	a dot	a square	●○○○
70. In the graphical representation of a vector, the length of the arrow shows its:	direction	unit	mass	magnitude	○○○●
71. In the graphical representation of a vector, the arrow head shows its:	magnitude	scale	unit	direction	○○○●
72. Scalars can be added using:	vector algebra only	graphical method only	ordinary rules of algebra	no rules	○○●○
73. Vectors are added using:	ordinary algebra	rules of vector algebra	only subtraction	only multiplication	○●○○
74. The method of adding vectors geometrically is called the:	tail-to-tail rule	head-to-head rule	parallel rule	head-to-tail rule	○○○●
75. The single vector obtained by combining two or more vectors is called the:	unit vector	resultant vector	null vector	base vector	○●○○
76. The horizontal number line of a coordinate system is called the:	y-axis	origin	reference frame	x-axis	○○○●
77. The vertical number line of a coordinate system is called the:	x-axis	y-axis	origin	coordinate	○●○○
78. The point where the x-axis and y-axis intersect is called the:	pole	vertex	mean position	origin	○○○●
79. A coordinate system from which positions of objects are described is called a:	vector frame	unit frame	measuring frame	reference frame	○○○●
80. The minimum value that can be measured on the scale of an instrument is its:	range	pitch	least count	mean value	○○●○
81. A metre rule usually has a least count of:	1 cm	0.1 mm	1 mm	0.01 mm	○○●○
82. A metre rule is divided into small divisions of:	centimetres	micrometres	decimetres	millimetres	○○○●

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Questions	A	B	C	D	A B C D
83. A flexible ruler used to measure larger lengths is called a:	vernier calliper	measuring tape	screw gauge	metre rule	○●○○
84. Which instrument can measure length smaller than 1 mm?	Metre rule	Measuring tape	Vernier calliper	Stop watch	○○●○
85. A vernier calliper has two scales; the sliding scale is called the:	main scale	circular scale	vernier scale	linear scale	○○●○
86. The least count of a vernier calliper is also called:	pitch	zero error	range	vernier constant	○○○●
87. If one main scale division is 1 mm and the vernier scale has 10 divisions, the least count is:	1 mm	0.01 mm	0.1 mm	10 mm	○○●○
88. The error present when the zeros of main scale and vernier scale do not coincide is called:	random error	zero error	personal error	least count error	○●○○
89. Zero error in a vernier calliper is positive when the vernier zero is:	to the left of the main scale zero	to the right of the main scale zero	exactly on the main scale zero	not visible	○●○○
90. Zero error in a vernier calliper is negative when the vernier zero is:	to the right of the main scale zero	to the left of the main scale zero	exactly on the main scale zero	hidden by the jaw	○●○○
91. The instrument best suited to measure the internal diameter of a pipe is the:	metre rule	measuring tape	vernier calliper	stop watch	○○●○
92. A screw gauge is used to measure:	large distances	time intervals	large masses	small lengths such as wire thickness	○○○●
93. The distance moved by the circular scale on the linear scale in one rotation is called:	pitch	least count	range	zero error	●○○○
94. The least count of a screw gauge equals pitch divided by:	number of main scale divisions	number of circular scale divisions	zero error	diameter	○●○○
95. The pitch of a screw gauge is 0.5 mm and its circular scale has 50 divisions. Its least count is:	0.01 mm	0.1 mm	0.05 mm	0.001 mm	●○○○
96. The least count of a screw gauge is 0.01 mm. If the main scale reading is zero and the 3rd line of the circular scale coincides with the datum line, the reading is:	3 mm	0.3 mm	0.03 mm	0.003 mm	○○●○
97. In a screw gauge, the part that prevents too much pressure on the object is the:	ratchet	anvil	datum line	spindle	●○○○
98. The object to be measured with a screw gauge is placed between the:	thimble and frame	anvil and spindle	ratchet and thimble	datum line and anvil	○●○○
99. Which instrument gives the most precise length measurement?	Screw gauge	Vernier calliper	Metre rule	Measuring tape	●○○○

Questions	A	B	C	D	A B C D
100. The total reading of a screw gauge is the:	main scale reading − circular scale reading	main scale reading × circular scale reading	main scale reading + circular scale reading	pitch × number of divisions	○○●○
101. The first mass measuring instrument invented was the:	balance	stop watch	vernier calliper	screw gauge	●○○○
102. In a physical balance, the body is placed in one pan and the other pan has:	water	sand	nothing	standard weights	○○○●
103. The volume of a liquid is measured with a:	measuring cylinder	physical balance	screw gauge	stop watch	●○○○
104. A measuring cylinder is also known as a:	test tube	graduated cylinder	beaker	burette	○●○○
105. The least count of a measuring cylinder is usually:	10 cm^3	0.1 cm^3	1 cm^3	100 cm^3	○○●○
106. Volume of an irregular solid is found using a measuring cylinder as:	final volume + initial volume	final volume × initial volume	final volume ÷ initial volume	final volume − initial volume	○○○●
107. A stop watch is used to measure:	mass	time interval	temperature	volume	○●○○
108. The least count of a digital stop watch is generally:	1 s	0.1 s	0.001 s	10 s	○●○○
109. The least count of an analogue stop watch is generally:	0.1 s	0.01 s	10 s	1 s	○○○●
110. Uncertainty that arises during a measurement is called:	mistake in unit	error	constant	exponent	○●○○
111. The two main types of errors in measurement are systematic errors and:	personal errors only	zero errors only	instrument errors only	random errors	○○○●
112. Errors that occur consistently in one direction are:	random errors	accidental errors	unpredictable errors	systematic errors	○○○●
113. A zero error in an instrument is an example of:	systematic error	random error	accidental error	counting error	●○○○
114. Errors caused by carelessness or bias of the observer are called:	random errors	exact values	least counts	personal errors	○○○●
115. Unpredictable and uncontrollable errors are called:	systematic errors	instrumental errors	zero errors	random errors	○○○●
116. Random errors can be minimized by:	using the same single reading	ignoring the instrument	taking repeated measurements	changing the unit	○○●○

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Questions	A	B	C	D	A B C D
117. Taking many readings and finding their mean:	increases errors	reduces errors	has no effect	removes the unit	○●○○
118. The time taken for one complete oscillation of a pendulum is called its:	amplitude	frequency	period	wavelength	○○●○
119. The period of a pendulum is measured by timing 10 oscillations in order to:	reduce error from human reaction time	increase the amplitude	make the string longer	change the mass	●○○○
120. If 10 oscillations of a simple pendulum take 20 s, its period is:	0.5 s	2 s	20 s	200 s	○●○○
121. The agreement between repeated measurements is called:	accuracy	least count	range	precision	○○○●
122. How close a measured value is to the true value is called:	accuracy	precision	pitch	error only	●○○○
123. A thermometer that always reads 2 °C higher than the true temperature is:	accurate but not precise	both accurate and precise	precise but not accurate	neither precise nor accurate	○○●○
124. Darts tightly grouped but far from the centre show:	high accuracy, low precision	high precision, low accuracy	high accuracy, high precision	low accuracy, low precision	○●○○
125. Darts scattered around the centre show:	precision but no accuracy	accuracy but low precision	high precision	zero error	○●○○
126. All accurately known digits and the first doubtful digit in a measurement are called:	decimal places	exact values	prefixes	significant figures	○○○●
127. Exact values are those that are:	estimated	counted	measured with a ruler	rounded	○●○○
128. The number of significant figures in 23.457 is:	4	3	5	2	○○●○
129. The number of significant figures in 0.00650 is:	5	6	3	2	○○●○
130. The number of significant figures in 0.0029 is:	2	4	5	3	●○○○
131. The number of significant figures in 0.00290 is:	2	5	4	3	○○○●
132. Which of the following has 4 significant figures?	0.001248	9000.8	5174.00	4	●○○○
133. The number 5174.00 has how many significant figures?	6	4	5	3	●○○○

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Questions	A	B	C	D	A B C D
134. The number 9000.8 has how many significant figures?	4	1	2	5	○○○●
135. In 29,000 spectators, the significant digits are:	all five digits	2 and 9 only	only 9	only the zeros	○●○○
136. 2.90×10^5 has how many significant figures?	3	2	5	1	●○○○
137. Zeros that only show the place of the decimal point in 0.0029 are:	significant	not significant	exact	always counted	○●○○
138. Rounding 3.876 to two decimal places gives:	3.87	3.90	3.8	3.88	○○○●
139. Rounding 657.873 to two decimal places gives:	657.88	657.90	657.87	658	○○●○
140. Rounding 24.68 to three significant figures gives:	24.7	24.6	24.68	25	●○○○
141. Rounding 0.07683 to three significant figures gives:	0.077	0.0768	0.0769	0.07683	○●○○
142. In rounding, if the digit to the right is 5 or more, the preceding digit is:	left unchanged	decreased by 1	dropped	increased by 1	○○○●
143. In rounding, if the digit to the right is less than 5, the preceding digit is:	left unchanged	increased by 1	doubled	decreased by 1	●○○○
144. Physics deals with matter, energy and their:	colour	taste	interaction	feelings	○○●○
145. The unit used by ancient Egyptians while building pyramids was the:	foot	yard	cubit	inch	○○●○
146. A cubit is measured from the elbow to the tip of the:	thumb	palm	wrist	middle finger	○○○●
147. The scientific method of expressing very large or small numbers using powers of ten is called:	standard form	expanded form	word form	mixed form	●○○○
148. 9.483×10^2 m is the standard form of:	948.3 m	94.83 m	9483 m	9.483 m	●○○○
149. Which branch of physics studies motion and forces?	Optics	Acoustics	Mechanics	Astrophysics	○○●○
150. Physics is called the most fundamental science because it:	has no formulae	studies only life	underlies other natural sciences	avoids mathematics	○○●○