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PHYSICS TEST - CHAPTER 2: KINEMATICS

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. Mechanics is the study of:	motion	light	sound	heat only	●○○○
2. The study of motion without considering its causes is called:	dynamics	kinematics	statics	thermodynamics	○●○○
3. The word "kinematics" comes from the language:	Latin	French	Greek	Arabic	○○●○
4. If an object does not change its position with time with respect to an observer, it is:	in motion	accelerating	rotating	at rest	○○○●
5. If an object changes its position with time with respect to an observer, it is:	at rest	in equilibrium	static	in motion	○○○●
6. A bench fixed in a park is at rest with respect to:	the moving earth	a person standing near it	the sun	a moving car	○●○○
7. Rest and motion are:	absolute	relative	the same thing	independent of observer	○●○○
8. The three main types of motion are translatory, rotatory and:	circular only	vibratory	linear only	random only	○●○○
9. Motion of an object along a path from one place to another is called:	rotatory motion	translatory motion	vibratory motion	periodic only	○●○○
10. Spinning of an object about its own axis is called:	translatory motion	rotatory motion	vibratory motion	rectilinear motion	○●○○
11. To-and-fro motion about a mean position is called:	rotatory motion	vibratory motion	rectilinear motion	curvilinear motion	○●○○
12. The motion of a screw of a rotating fan is:	vibratory motion	random motion	rectilinear motion	rotatory motion	○○○●
13. The motion of a swing is an example of:	rotatory motion	rectilinear motion	vibratory motion	curvilinear motion	○○●○
14. The motion of the strings of a sitar is:	rotatory motion	vibratory motion	translatory motion	random motion	○●○○

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Questions	A	B	C	D	A B C D
15. Motion of helicopter rotor blades is:	vibratory motion	rectilinear motion	rotatory motion	random motion	○○●○
16. Translatory motion in a straight line is called:	curvilinear motion	random motion	rectilinear motion	rotatory motion	○○●○
17. Translatory motion along a curved path is called:	rectilinear motion	rotatory motion	vibratory motion	curvilinear motion	○○○●
18. Motion of a freely falling stone is:	rotatory motion	rectilinear motion	vibratory motion	random motion	○●○○
19. A car moving along a straight road shows:	vibratory motion	rotatory motion	random motion	rectilinear motion	○○○●
20. Motion of a kite flying in the sky is an example of:	rotatory motion only	vibratory motion only	curvilinear or random motion	rectilinear motion only	○○●○
21. In translatory motion all points of a body move:	in circles	about a fixed axis	parallel to each other	to and fro	○○●○
22. In rotatory motion the particles of a body move in:	straight lines	zigzag paths	parallel lines	circles	○○○●
23. An object can have a combination of:	only one type of motion	no motion	only rectilinear motion	more than one type of motion	○○○●
24. Rectilinear, curvilinear and random motions are types of:	rotatory motion	vibratory motion	circular motion	translatory motion	○○○●
25. Length of the path travelled between two positions is called:	distance	displacement	velocity	acceleration	●○○○
26. Distance is a:	vector quantity	scalar quantity	unit	constant	○●○○
27. The shortest straight directed distance from initial to final position is:	distance	speed	displacement	acceleration	○○●○
28. Displacement is a:	vector quantity	scalar quantity	base unit	scalar constant	●○○○
29. The SI unit of distance is:	metre	kilometre	second	newton	●○○○
30. The SI unit of displacement is:	metre per second	second	m/s^2	metre	○○○●
31. Change in position vector of an object is called:	speed	displacement	force	energy	○●○○

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Questions	A	B	C	D	A B C D
32. Elapsed time Δt is:	sum of times	difference between ending and beginning times	average of times	product of times	○●○○
33. Displacement can be zero while distance is:	not zero	also zero	always equal	negative	●○○○
34. Distance and displacement are equal when the body moves:	in a straight line without changing direction	in a circle	along a curved path	to and fro	●○○○
35. A boy goes 5 m east and then returns 5 m west. His displacement is:	0 m	10 m	5 m	−10 m	●○○○
36. A boy goes 5 m east and then returns 5 m west. His distance is:	0 m	5 m	10 m	2.5 m	○○●○
37. A girl walks 3 km west and then 4 km south. Her total distance is:	5 km	1 km	7 km	12 km	○○●○
38. A girl walks 3 km west and then 4 km south. The magnitude of her displacement is:	7 km	5 km	1 km	25 km	○●○○
39. A runner completes one full round of a circular track. His displacement is:	equal to the circumference	equal to the radius	zero	equal to the diameter	○○●○
40. The measure of how fast an object is moving is:	displacement	speed	distance	mass	○●○○
41. Speed is the distance covered per unit:	time	volume	mass	force	●○○○
42. The SI unit of speed is:	m/s^2	m/s	m	kg	○●○○
43. Speed is a:	vector quantity	base quantity	scalar quantity	negative quantity	○○●○
44. Speed is calculated by dividing:	time by distance	distance by time	displacement by distance	mass by time	○●○○
45. A car moves 70 km in 1 hour. Its speed is:	35 km/h	140 km/h	70 km/h	7 km/h	○○●○
46. Speed of an object that does not speed up or slow down is:	constant	variable	zero	negative	●○○○
47. Total distance divided by total time is called:	instantaneous speed	velocity	acceleration	average speed	○○○●
48. The speed at a particular instant of time is called:	average speed	uniform velocity	displacement	instantaneous speed	○○○●

Questions	A	B	C	D	A B C D
49. The speedometer of a car shows its:	average speed	instantaneous speed	average velocity	acceleration	○●○○
50. Fastest man on earth Usain Bolt covered 100 m in 9.58 s; his speed was about:	10.44 m/s	9.58 m/s	100 m/s	958 m/s	●○○○
51. The fastest animal on land is the:	cheetah	peregrine falcon	sloth	snail	●○○○
52. The fastest animal in the world is the:	peregrine falcon	cheetah	horse	lion	●○○○
53. The maximum speed of a cheetah is about:	33.33 m/s	108.3 m/s	10.44 m/s	343 m/s	●○○○
54. The speed of light in vacuum is about:	3×10^8 m/s	3×10^6 m/s	3×10^5 m/s	343 m/s	●○○○
55. The speed of sound in air is roughly:	3×10^8 m/s	34.3 m/s	3430 m/s	343 m/s	○○○●
56. Anything made of matter can only approach but never reach:	the speed of sound	the speed of light	zero speed	the speed of a cheetah	○●○○
57. 36 km/h in m/s is:	10 m/s	36 m/s	3.6 m/s	100 m/s	●○○○
58. 72 km/h in m/s is:	72 m/s	20 m/s	7.2 m/s	40 m/s	○●○○
59. 10 m/s in km/h is:	36 km/h	10 km/h	3.6 km/h	100 km/h	●○○○
60. 36 m/s in km/h is:	36 km/h	129.6 km/h	10 km/h	3.6 km/h	○●○○
61. 160 km/h in m/s is about:	160 m/s	57.6 m/s	4.44 m/s	44.44 m/s	○○○●
62. A car covers 100 m in 5 s. Its speed is:	500 m/s	20 m/s	0.05 m/s	105 m/s	○●○○
63. A train moving at 20 m/s takes how long to cover 400 m?	8000 s	0.05 s	420 s	20 s	○○○●
64. Maglev train covered 30 km in 450 s. Its speed is about:	450 m/s	30 m/s	66.67 m/s	6.67 m/s	○○●○
65. Speed of a train covering 30 km in 450 s, in km/h, is about:	66.7 km/h	450 km/h	30 km/h	240 km/h	○○○●

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Questions	A	B	C	D	A B C D
66. A ball bowled at 44.8 m/s reaches a batsman 17.5 m away. His reaction time is about:	2.56 s	0.04 s	3.9 s	0.39 s	○○○●
67. Velocity is the rate of change of:	distance	speed	mass	displacement	○○○●
68. Velocity is a:	scalar quantity	constant	vector quantity	base quantity	○○●○
69. The SI unit of velocity is:	m/s^2	m	N	m/s	○○○●
70. Velocity differs from speed because it has:	no unit	no magnitude	direction	more magnitude	○○●○
71. For straight-line motion in one direction, speed and velocity have:	different magnitudes	zero magnitude	opposite magnitudes	the same magnitude	○○○●
72. Total displacement divided by total time is:	average velocity	average speed	acceleration	instantaneous speed	●○○○
73. A horse moves 60 m right in 3 s, then 30 m back in 2 s. Its average velocity is:	18 m/s	18 m/s to the left	30 m/s	6 m/s	○○○●
74. Velocity measured over a very small time interval is called:	instantaneous velocity	average velocity	uniform speed	acceleration	●○○○
75. A body moving with constant speed in a circle has:	changing velocity	constant velocity	zero velocity	zero speed	●○○○
76. A body travels along a curved track of 800 m and ends 600 m from the start. Its displacement is:	800 m	1400 m	600 m	200 m	○○●○
77. The velocity of a body changes when its:	mass changes	colour changes	shape changes	speed or direction changes	○○○●
78. Time rate of change of velocity is called:	speed	displacement	acceleration	momentum	○○●○
79. Acceleration is a:	scalar quantity	base quantity	constant	vector quantity	○○○●
80. The SI unit of acceleration is:	m/s	m	m/s^2	m^2/s	○○●○
81. Acceleration has the same direction as the change in:	velocity	speed	distance	time	●○○○
82. Acceleration is given by:	change in velocity ÷ time	distance ÷ time	velocity × time	displacement ÷ velocity	●○○○

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Questions	A	B	C	D	A B C D
83. A decrease in velocity with time is called:	negative acceleration (deceleration)	positive acceleration	zero acceleration	constant velocity	●○○○
84. An increase in velocity with time is called:	deceleration	zero acceleration	constant speed	positive acceleration	○○○●
85. A car's velocity increases by 20 m/s in 5 s. Its acceleration is:	4 m/s²	100 m/s²	0.25 m/s²	25 m/s²	●○○○
86. A cyclist has an acceleration of 2 m/s² for 5 s. The change in velocity is:	2.5 m/s	0.4 m/s	10 m/s	7 m/s	○○●○
87. A car moving at 10 m/s has an acceleration of 2 m/s² for 10 s. Its final velocity is:	20 m/s	12 m/s	30 m/s	100 m/s	○○●○
88. A body moving at 5 m/s reaches 25 m/s in 10 s. Its acceleration is:	20 m/s²	2 m/s²	0.5 m/s²	3 m/s²	○●○○
89. A car starts from rest and reaches 20 m/s in 10 s. Its acceleration is:	2 m/s²	0.5 m/s²	200 m/s²	10 m/s²	●○○○
90. A car slows from 30 m/s to 10 m/s in 5 s. Its acceleration is:	−4 m/s²	4 m/s²	−6 m/s²	−2 m/s²	●○○○
91. A cyclist moving west applies brakes. The direction of its acceleration is towards:	east	west	north	south	●○○○
92. A stone whirling on a string has acceleration because its:	speed increases	mass changes	distance is zero	direction of velocity changes	○○○●
93. Acceleration can be produced by a change in:	speed, direction or both	mass only	colour	volume only	●○○○
94. An object moving with equal changes in velocity in equal time intervals has:	non-uniform acceleration	uniform acceleration	zero acceleration	zero velocity	○●○○
95. When velocity changes unsteadily with time, the acceleration is:	uniform	zero	constant	non-uniform	○○○●
96. Zero acceleration means the body moves with:	increasing velocity	decreasing velocity	changing direction	constant velocity	○○○●
97. Freely falling bodies move under the influence of:	gravity only	air resistance only	friction	magnetism	●○○○
98. Galileo dropped objects of different masses from the:	Eiffel Tower	Big Ben	Leaning Tower of Pisa	Minar-e-Pakistan	○○●○
99. Galileo found that objects of different masses falling freely reach the ground:	at the same time	heavier first	lighter first	never	●○○○

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Questions	A	B	C	D	A B C D
100. The acceleration of freely falling bodies is called:	uniform velocity	average speed	displacement	acceleration due to gravity	○○○●
101. The symbol for acceleration due to gravity is:	G	a	v	g	○○○●
102. Near the earth's surface, g is approximately:	98 m/s²	0.98 m/s²	9.8 m/s²	8.9 m/s²	○○●○
103. The acceleration due to gravity is directed:	upward	horizontally	away from the earth	towards the centre of the earth	○○○●
104. Acceleration due to gravity is independent of the:	mass of the falling body	colour of the body	shape of the path	time of the day	●○○○
105. Neglecting air resistance, a stone and a ball dropped from a roof reach the ground:	stone first	together	ball first	never	○●○○
106. For a body falling downward, g is taken as:	negative (−g)	zero	positive (+g)	infinite	○○●○
107. For a body thrown upward, g is taken as:	positive (+g)	zero	negative (−g)	10 g	○○●○
108. A ball dropped from rest has initial velocity:	9.8 m/s	zero	19.6 m/s	equal to g	○●○○
109. A ball dropped freely from a tower reaches the ground in 4 s. Its speed on impact is:	2.45 m/s	39.2 m/s	19.6 m/s	0 m/s	○●○○
110. A stone is dropped from rest. Its speed after 2 s is:	19.6 m/s	9.8 m/s	4.9 m/s	39.2 m/s	●○○○
111. A block dropped from a building hits the ground with speed 78.4 m/s. The time taken is:	0.125 s	768 s	8 s	88 s	○○●○
112. A ball is thrown straight up and takes 2 s to reach the top. Its initial speed was:	9.8 m/s	4.9 m/s	19.6 m/s	2 m/s	○○●○
113. The speed of a body thrown vertically upward at its highest point is:	9.8 m/s	maximum	equal to initial speed	zero	○○○●
114. A 100 g ball is dropped and a 1 kg ball is dropped from the same height. Neglecting air resistance, they reach the ground with:	the same speed	different speeds, heavy faster	different speeds, light faster	zero speed	●○○○
115. A method of showing the relationship between two quantities using axes is a:	graph	table	chart of units	formula	●○○○
116. In a distance-time graph, time is plotted along the:	y-axis	both axes	x-axis	diagonal	○○●○

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Questions	A	B	C	D	A B C D
117. In a distance-time graph, distance is plotted along the:	x-axis	origin	y-axis	slope	○○●○
118. A distance-time graph always lies in the:	negative xy-plane	positive xy-plane	second quadrant	third quadrant	○●○○
119. The slope (gradient) of a distance-time graph gives:	speed	acceleration	displacement	force	●○○○
120. A straight sloping line on a distance-time graph shows:	increasing speed	decreasing speed	constant speed	rest	○○●○
121. A horizontal line on a distance-time graph shows that the body is:	moving with constant speed	accelerating	decelerating	at rest	○○○●
122. A distance-time graph curving upward shows:	decreasing speed	increasing speed	constant speed	rest	○●○○
123. A distance-time graph curving downward (flattening) shows:	decreasing speed	increasing speed	constant speed	acceleration	●○○○
124. A distance-time graph with a steeper slope shows:	smaller speed	rest	greater speed	zero speed	○○●○
125. Slope of a distance-time graph is found by dividing:	change in time by change in distance	change in distance by change in time	distance by acceleration	time by speed	○●○○
126. A car's distance-time graph is a straight line from (0 s, 0 m) to (10 s, 100 m). Its speed is:	1000 m/s	0.1 m/s	10 m/s	110 m/s	○○●○
127. The slope of a speed-time graph gives the:	acceleration	distance	displacement	speed	●○○○
128. The area under a speed-time graph gives the:	distance travelled	acceleration	speed	time	●○○○
129. In a speed-time graph, speed is plotted along the:	y-axis	x-axis	slope	origin	●○○○
130. A horizontal line on a speed-time graph shows:	constant acceleration	increasing speed	rest	constant speed	○○○●
131. A straight sloping line on a speed-time graph shows:	constant speed	uniform acceleration	rest	zero acceleration	○●○○
132. A speed-time graph in the form of a rectangle has area:	½ × speed × time	speed ÷ time	speed + time	speed × time	○○○●
133. A speed-time graph in the form of a triangle has area:	base × height	base + height	base ÷ height	½ × base × height	○○○●

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Questions	A	B	C	D	A B C D
134. A body moves at a constant 10 m/s for 5 s. The distance from the speed-time graph area is:	2 m	15 m	50 m	0.5 m	○○●○
135. A body's speed increases uniformly from 0 to 10 m/s in 4 s. Distance covered is:	40 m	20 m	2.5 m	14 m	○●○○
136. A car speeds up from 0 to 30 m/s in 20 s. Its acceleration is:	0.67 m/s²	1.5 m/s²	50 m/s²	600 m/s²	○●○○
137. A car moves at constant 30 m/s from 20 s to 50 s. In that interval its acceleration is:	1.5 m/s²	zero	−3 m/s²	30 m/s²	○●○○
138. A car slows from 30 m/s to 0 in 10 s. The magnitude of its acceleration is:	0.33 m/s²	300 m/s²	3 m/s²	30 m/s²	○○●○
139. A car covers 1350 m in 60 s. Its average speed is:	81000 m/s	22.5 m/s	0.044 m/s	1410 m/s	○●○○
140. A car moves at 20 m/s for 20 s. The distance it covers is:	1 m	40 m	400 m	4000 m	○○●○
141. A car moving at 20 m/s decelerates uniformly to rest in 30 s. The distance covered during braking is:	600 m	300 m	150 m	0.67 m	○●○○
142. A girl on a racing cycle moving at 50 km/h stops uniformly in 60 s. Her acceleration is about:	−0.83 m/s²	−13.9 m/s²	0.23 m/s²	−0.23 m/s²	○○○●
143. When the slope of a body's distance-time graph increases, the body is moving with:	decreasing speed	constant speed	increasing speed	zero speed	○○●○
144. Which graph shows an increasing speed of a car?	horizontal line	distance-time curve bending upward	straight sloping line	curve bending downward	○●○○
145. Gradient of the distance-time graph gives speed, and the gradient of the speed-time graph gives:	distance	displacement	time	acceleration	○○○●
146. In a distance-time graph of a car stopped for 30 minutes, the stop is shown by a:	steep line	horizontal line	curve upward	vertical line	○●○○
147. Which quantity can be zero even when the body has travelled a long distance?	distance	displacement	speed	time	○●○○
148. An object moves in a circle with constant speed. Which statement is true?	its acceleration is zero	its velocity is constant	its displacement is always increasing	it is accelerating	○○○●
149. A body can be accelerated without speeding up or slowing down by changing its:	mass	temperature	direction	colour	○○●○
150. Can a car moving to the right have acceleration to the left?	No, never	Only when stopped	Yes, when it slows down	Only when turning right	○○●○