

# *Adabistan-e-Soophia*

**2<sup>nd</sup> Term Examination 2020 – 21**

<b>Student's Name</b>																	
<b>Class</b>	<b>Pre – IX</b>	<b>Roll #</b>								<b>Paper</b>	<b>Physics</b>						
<b>QUESTION NUMBER</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Total</b>										
<b>MAXIMUM MARKS</b>		12	30	09	09	09	<b>60</b>										
<b>MARKS OBTAINED</b>																	
<b>CHECKED BY:</b>																	

1. Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink. Cutting or filling two or more times result is zero mark in that question. (12)

Sr #	Questions	(A)	(B)	(C)	(D)
i.	A body has translatory motion if it moves along a:	straight line	circle	line without rotation	curve path
ii.	The motion of a body about an axis is called:	circular motion	rotatory motion	vibratory motion	random motion
iii.	Which of the following is a vector quantity?	speed	distance	displacement	power
iv.	A ball is thrown vertically upward. Its velocity at highest point is:	$-10ms^{-1}$	Zero	$10ms^{-2}$	none of these
v.	A car starts from rest. It acquires a speed of $25ms^{-1}$ after 20s. The distance moved by the car during this time is:	31.25m	250m	500m	5000m
vi.	A train is moving at speed of $36kmh^{-1}$ . Its speed expressed in $ms^{-1}$ is:	$10ms^{-1}$	$20ms^{-1}$	$25ms^{-1}$	$36ms^{-1}$
vii.	A sprinter completes its 100m race in 12s. its average speed is:	$8.33ms^{-1}$	$6ms^{-1}$	$5ms^{-1}$	$60ms^{-1}$
viii.	Newton's first law of motion is valid only in the absence of:	force	net force	friction	momentum
ix.	Inertia depends upon:	mass	force	net force	velocity
x.	Cheetah can run at a speed of:	$60kmh^{-1}$	$65kmh^{-1}$	$70kmh^{-1}$	$75kmh^{-1}$
xi.	Riders in Ferris wheel have:	translatory motion	vibratory motion	linear motion	none of these
xii.	A car starts from rest. Its velocity becomes $20ms^{-1}$ in 8s. Its acceleration is:	$2ms^{-2}$	$2.5ms^{-2}$	$3ms^{-2}$	$3.5ms^{-2}$

## (Section – I)

**Note:** Don't use ink remover anywhere in the paper.

Write proper question numbers and part numbers as mentioned in question paper.

**2. Attempt the following questions. (Any Fifteen) (15x2=30)**

- i. Define rest and motion.
- ii. Can a body moving at constant speed have acceleration?
- iii. How a vector quantity can be representing graphically?
- iv. Why vector quantities cannot be added and subtracted like scalar quantities?
- v. How are vector quantities important to us in our daily life?
- vi. What is meant by LIDAR?
- vii. Define terminal velocity and give example.
- viii. What is the difference between mass and weight?
- ix. What is law of inertia?
- x. Why it is dangerous to travel on the roof of a bus?
- xi. Action and reaction are always equal and opposite. Then how does a body move?
- xii. A horse pulls a cart. If the action and reaction are equal and opposite then how does a cart move?
- xiii. What is meant by a net force?
- xiv. Why does a passenger moves outward when a bus takes a turn?
- xv. Define Newton's 3<sup>rd</sup> law of motion.
- xvi. Define momentum and write its units.
- xvii. Define inertia.

(Section – II)

Note: Solve the following questions. (Any Two)

(9x2=18)

3. (a) Derive the 2<sup>nd</sup> equation of motion.  $S = v_i t + \frac{1}{2} a t^2$  (04)
- (b) A tennis ball is hit vertically upward with a velocity of  $30ms^{-1}$ . It takes 3s to reach at the highest point. Calculate the maximum height reached by ball. How long it will take to return to ground? (05)
4. (a) State and explain Newton's 2<sup>nd</sup> law of motion. (04)
- (b) A body has weight  $20N$ . How much force is required to move it vertically upward with an acceleration of  $2ms^{-2}$ ? (05)
5. (a) Draw the speed time graph when: (04)
- i. Object is moving at constant speed.
  - ii. Object is moving with uniform acceleration.
- (b) A force of  $20N$  moves a body with an acceleration of  $2ms^{-2}$ . What is its mass? (05)