

TEST NO. 4**CH - 4****PHYSICS****Time Allowed: 15 Minutes****CLASS 9TH - 2020****Paper: (Objective Type)****Maximum Marks: 12**

Note : You have four choices for each objective type question as A, B, C and D. The choice which you think is Correct, fill that circles in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

Q. No.	QUESTIONS	(A)	(B)	(C)	(D)
1.	The number of vectors that can be added by head to tail rule is.	2	3	5	4
2.	If 10 Newton force is making an angle 30° with x-axis, then value of horizontally component is.	4N	5N	7 N	8.7 N
3.	In right angle triangle, length of base is 4 cm and is hypotenuse is 5 cm, then length of perpendicular is.	1 cm	3 cm	20 cm	9 cm
4.	The turning effect of a force is called.	Momentum	Torque	Pressure	Work
5.	The net torque acting on a rotating body with uniform speed is.	1	2	5	0
6.	The centre of gravity of irregular shaped body can be found with help of	Gravity	Metre rod	Plump line	Screw gauge
7.	Two equal but unlike parallel forces having different line of action produce.	Torque	A couple	Equilibrium	Neutral equilibrium
8.	First condition of equilibrium is..	$\Sigma \tau$	$\Sigma F = 0$	$\frac{\Sigma Fx}{Fy} = 0$	$\frac{\Sigma Fy}{Fx} = 0$
9.	Racing car are made stable by.	Increasing their speed	Decreasing their mass	Lowering their centre of gravity	Decreasing their width
10.	Value of $\tan 45^\circ$	0.5	1,732	0.577	1
11.	The types of equilibrium are	3	2	1	4
12.	When centre of gravity is at the highest position, body will be in.	Neutral equilibrium	Stabel equilibrium	Unstable equilibrium	None of these

	A B C D		A B C D		A B C D		A B C D		A B C D
1	(A) (B) (C) (D)	4	(A) (B) (C) (D)	7	(A) (B) (C) (D)	10	(A) (B) (C) (D)	13	(A) (B) (C) (D)
2	(A) (B) (C) (D)	5	(A) (B) (C) (D)	8	(A) (B) (C) (D)	11	(A) (B) (C) (D)	14	(A) (B) (C) (D)
3	(A) (B) (C) (D)	6	(A) (B) (C) (D)	9	(A) (B) (C) (D)	12	(A) (B) (C) (D)	15	(A) (B) (C) (D)

نوٹ: معروضی سوال نامے کو توجہ سے پڑھیں اور ہر MCQ کی درست آپشن A, B, C, D کو پین کی سیاہی یا مارکر سے اس طرح پُر کریں کہ سیاہی دائرے سے باہر نہ نکلے۔ ایک سے زیادہ دائروں کو پُر کرنے یا کاٹ کر پُر کرنے کی صورت میں مذکورہ جواب غلط تصور ہوگا۔

(PART – I)

- 2. Write short answers to any Five (5) questions:** **10**
- (i) What is Head to Tail Rule/ Explain with example?
 - (ii) Define i) Resultant vector – ii) Centre of gravity
 - (iii) Define Resolution of forces.
 - (iv) Define perpendicular components.
 - (v) Define torque and center of mass.
 - (vi) Difference between Axis of rotation and moment arm.
 - (vii) What is rigid body?
 - (viii) Write the principle of moments.
- 3. Write short answers to any Five (5) questions:** **10**
- (i) Differentiate between centre of mass and centre of gravity.
 - (ii) What is meant by Couple of forces?
 - (iii) Differentiate between torque and couple.
 - (iv) Define equilibrium.
 - (v) Think of a body which is at rest but not in equilibrium.
 - (vi) State 2nd condition for equilibrium and write its formula.
 - (vii) Why a body cannot be in equilibrium due to a single force acting on it.?
 - (viii) Why the height of vehicles is kept as low as possible?
- 4. Write short answers to any Five (5) questions:** **10**
- (i) Define centre of mass.
 - (ii) Define resultant of force and explain by diagram.
 - (iii) How head to tail rule helps us to find resultant of vectors?
 - (iv) What is difference between stable and unstable equilibrium.
 - (v) State first condition of equilibrium.
 - (vi) Why a body cannot be in equilibrium due to a single force acting on it.
 - (vii) Difference between clock wise and anti-clock wise moment.
 - (viii) When a body is said to be in equilibrium?

(PART – II)

Note:- Attempt any TWO questions.

- 5.** (a) Define rectangular components? How can a force be resolved into its rectangular Components. **4**
- (b) A man is pulling a trolley on a horizontal road with a force of 200 N making 30 degree with the road. Find horizontal and vertical components of its force. **5**
- 6.** (a) Define torque on what factors does it depend? Explain it. **4**
- (b) The steering of car has a radius 16 cm. Find the torque produced by a couple of 50 N **5**
- 7.** (a) Find the centre of gravity of an irregular shaped thin lamina with the help of an experiment. **4**
- (b) A nut has been tightened by a force of 200 N using 10 cm long spanner. What length of spanner is required to loosen the same nut with 150 N force? **5**