

## MDCAT Physics Chapter 2 Motion & Force Online Test

Sr	Questions	Answers Choice
1	A rigid uniform bar of length 2.4 m is pivoted horizontally at its mid-point, weights are hung from two points of the bar as shown in diagram. To maintain horizontal equilibrium, a couple is applied to the bar: What is the torque and the direction of couple?	A. 40 N m clockwise B. 40 N m anti-clockwise C. 80 N m clockwise D. 80 N m anti-clockwise
2	Vertical component of velocity of the projectile at any instant 't' from the ground is given by:	A
3	A man has weight 980 N in a stationary lift. What will be his weight if the lift starts moving up with anacceleration of 4.9 $\rm ms^{-2}$	A. 980 N B. 1470 N C. 1980 N D. 1460 N
4	The distance covered by a body in time 't' starting from rest is:	A. 1/2   \sup>2 \sup> B. \si>vt \si> C.   \sup \sup>2 \sup> D.   \sup \sup>2 \sup> S \sup \sup>2 \sup>
5	In a one-dimensional elastic collision, the relative velocity of approach before collision is equal to:	A. Sum of the velocities of the bodies B. e times the relative velocity of separation after collision C. 1∕□ times the relative velocity of separation after collision D. relative velocity of separation after collision
6	The angle of projection, at which the range of projectile would become half of its maximum value.	A. 45Degree B. 30Degree C. 15Degree D. 60 Degree
7	A body of mass m having an initial velocity v, makes head on elastic collision with a stationary body of mass m. After the collision, the body of mass m comes to rest and only the body having mass M moves. This will happen only when:	A. m>>M B. m< <m )="" c.="" d.="" m="1M&lt;/td"></m>
8	Two projectiles 'A' and 'B' are thrown with same speed but at angle of 40 degree and 50 degree with the horizontal. The horizontal range of 'A' will be:	A. Equal to that of 'B' B. Greater than that of 'B' C. Less than that of 'B' D. 4/5times that of 'B'
9	Swimming is possible on account of	A. 1 <sup>st</sup> law of motion B. 2 <sup>nd</sup> law of motion C. 3 <sup>rd</sup> law of motion D. Newton's law of Gravitation
10	A ball takes 't' second to fall from a height $\Box\Box$ and '2t' second to fall from a height $\Box\Box$ then h1/h2 is:	A. 2 B. 4 C. 0.5 D. 0.25
11	If a body changes its momentum from 100 N s to 200 N s in 10 s then the unbalanceexternal force responsible to change the momentum is	A. 5 N B. 2.5 N C. 2n D. 10n
12	Newton's third law concerns the forces of interaction between two bodies. Which of the following statement relating to the third law is not correct:	A. The two forces must be the same type B. The two forces must act on different bodies C. The two forces are always opposite in direction D. The two forces are equal and opposite so the bodies are in equilibrium
13	Speedometer of an automobile measures	A. Average velocity     B. Instantaneous velocity     C. Acceleration     D. Instantaneous speed
14	Two 8 N forces act on each end of the beam of length 0.60m. Two forces are parallel and acting opposite to each other, the angle between the force and beam is 60o, what is the	A. 2.4 Nm B. 4.2 Nm

	torque of the couple exerted on the beam:	C. 4.8 Nm D. 9.6 Nm
15	A machine gun fires 'n' bullets per second and the mass of each bullet is m. If v is the speed of each bullet then the force exerted on the machine gun is:	A. <i>mng</i> B. <i>mnv</i> C. <i>mnvg</i> D. <i>mnv/g</i>
16	A monkey is accelerating down a string whose breaking strength is two third of his weight. The minimumacceleration of the monkey should be	A. 1/3g B. g C. 2/3 g D. 0 m/s2
17	The angular momentum of a body changes from 30 J-S to 50 J-S in 0.5 sec. The torque acting on it is	A. 40 N-m B. 100 N-m C. 50 N-m D. 150 N-m
18	Two railway trucks of masses m and 3m move towards each other in opposite directions with speeds 2v and v respectively. These trucks collide and stick together. What is the speed of the trucks after the collision?	A. <i>v/4</i> B. <i>v/2</i> C. <i>v</i> D. <i>5v/4</i>
19	The rate of change of momentum of a body falling freely under gravity is equal to its	A. Impulse B. Kinetic energy C. Pover D. Weight
20	A particle executing one dimensional motion, finally comes to rest, what will be the angle between acceleration and displacement during motion:	A. 0 B. π C. <div>□/2</div> D. □/4