

## MDCAT Physics Chapter 2 Motion & Force Online Test

Sr	Questions	Answers Choice
1	As in linear motion force determines linear acceleration where as in circular motion torque determines its	A. Angular acceleration B. Linear acceleration C. Vibratory acceleration D. Tangential acceleration
2	A rider uses Motorcycle safety helmet that extends the time of collision during accident hence decreasing the	A. Change of collision B. Force acting C. Velocity D. Impulse
3	The centre of gravity of a triangular plate is at	A. On end of the plate B. The midpoint of any side of the plate C. The midpoint of any side of the plate D. The midpoint of any side of the plate
4	A stone is thrown upwards it returns to ground describing a parabolic path which of the following remains constant:	A. Speed of the ball B. Kinetic energy of the ball C. Vertical component of velocity D. Horizontal component of velocity
5	If a body changes its momentum from 100 N s to 200 N s in 10 s then the unbalance external force responsible to change the momentum is	A. 5 N B. 2.5 N C. 2n D. 10n
6	Two bodies are projected at angles $\alpha$ and $(90^\circ - \alpha)$ with the horizontal at the same speed. The ratio of their maximum heights is	A. 1 : 1 B. 1 : $\tan \alpha$ C. 1 : $\tan^2 \alpha$ D. $\tan^2 \alpha : 1$
7	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
8	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
9	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
10	A body is in translational equilibrium if	A. $\Sigma P = 0$ B. $\Sigma L = 0$ C. $\Sigma F = 0$ D. $\Sigma \tau = 0$
11	What is the resultant force in the diagram shown?	A. Zero B. 6N to left C. 6N to right D. 11N to right
12	Vertical component of velocity of the projectile at any instant 't' from the ground is given by:	A. $u \sin \theta$ B. $u \sin \theta - gt$ C. $u \sin \theta - gt$ D. $u \sin \theta + gt$
13	A particle executing one dimensional motion, finally comes to rest, what will be the angle between acceleration and displacement during motion:	A. 0 B. $\pi$ C. $\pi/2$ D. $\pi/4$
14	The time of flight of a projectile is maximum when angle of projection is:	A. 30 Degree B. 45Degree C. 60Degree D. 90Degree
		A. Zero at T B. ...

15	In the absence of air resistance, a stone is thrown from P and follows a parabolic path in which the highest point reached is T. The vertical component of acceleration of stone is:	B. Greatest at I C. ) Greatest at P D. the same at P as at T
16	Speedometer of an automobile measures	A. Average velocity B. Instantaneous velocity C. Acceleration D. Instantaneous speed
17	A monkey is accelerating down a string whose breaking strength is two third of his weight. The minimum acceleration of the monkey should be	A. $1/3g$ B. $g$ C. $2/3 g$ D. $0 \text{ m/s}^2$
18	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'
19	A boy is travelling from Lahore to Karachi with uniform velocity . Its	A. Speed changes B. Acceleration changes C. Direction of motion changes D. Displacement from origin changes
20	A man has weight 980 N in a stationary lift. What will be his weight if the lift starts moving up with an acceleration of $4.9 \text{ ms}^{-2}$	A. 980 N B. 1470 N C. 1980 N D. 1460 N