

## MDCAT Physics Chapter 2 Motion & Force Online Test

| Sr | Questions  | Answers Choice   |
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| 1  | As in linear motion force determines linear acceleration where as in circular motion torque determines its   | A. Angular acceleration<br>B. Linear acceleration<br>C. Vibratory acceleration<br>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<br>B. Force acting<br>C. Velocity<br>D. Impulse   |
| 3  | The centre of gravity of a triangular plate is at  | A. On end of the plate<br>B. The midpoint of any side of the plate<br>C. The midpoint of any side of the plate<br>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<br>B. Kinetic energy of the ball<br>C. Vertical component of velocity<br>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<br>B. 2.5 N<br>C. 2n<br>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<br>B. 1 : $\tan \alpha$<br>C. 1 : $\tan^2 \alpha$<br>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<br>B. 40 N m anti-clockwise<br>C. 80 N m clockwise<br>D. 80 N m anti-clockwise   |
| 8  | Swimming is possible on account of   | A. 1 <sup>st</sup> law of motion<br>B. 2 <sup>nd</sup> law of motion<br>C. 3 <sup>rd</sup> law of motion<br>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<br>B. 30Degree<br>C. 15Degree<br>D. 60 Degree  |
| 10 | A body is in translational equilibrium if  | A. $\Sigma P = 0$<br>B. $\Sigma L = 0$<br>C. $\Sigma F = 0$<br>D. $\Sigma \tau = 0$  |
| 11 | What is the resultant force in the diagram shown?  | A. Zero<br>B. 6N to left<br>C. 6N to right<br>D. 11N to right  |
| 12 | Vertical component of velocity of the projectile at any instant 't' from the ground is given by:   | A. $u \sin \theta$<br>B. $u \sin \theta - gt$<br>C. $u \sin \theta - gt$<br>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<br>B. $\pi$<br>C. $\pi/2$<br>D. $\pi/4$   |
| 14 | The time of flight of a projectile is maximum when angle of projection is:   | A. 30 Degree<br>B. 45Degree<br>C. 60Degree<br>D. 90Degree  |
|    |  | A. Zero at T<br>B. ...   |

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| 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<br>C. ) Greatest at P<br>D. the same at P as at T   |
| 16 | Speedometer of an automobile measures  | A. Average velocity<br>B. Instantaneous velocity<br>C. Acceleration<br>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. $1/3g$<br>B. $g$<br>C. $2/3 g$<br>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'<br>B. Greater than that of 'B'<br>C. Less than that of 'B'<br>D. 4/5times that of 'B'        |
| 19 | A boy is travelling from Lahore to Karachi with uniform velocity . Its   | A. Speed changes<br>B. Acceleration changes<br>C. Direction of motion changes<br>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<br>B. 1470 N<br>C. 1980 N<br>D. 1460 N  |