# MDCAT Physics Online Test

| Sr | Questions | Answers Choice |
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| 1 | The kinetic energy of a body rotating with an angular speed □ depends on. | A. angular speed<br>B. distribution of mass<br>C. neither (A) nor (B)<br>D. both (A) and (B) |
| 2 | SI unit of kinetic energy of rotation is | A. joule second<br>B. joule<br>C. joule second<br>D. joule meter |
| 3 | Torque is necessary for producing. | A. angular speed<br>B. linear acceleration<br>C. angular acceleration<br>D. none of these |
| 4 | Angular displacement in rotational motion is expressed in | A. m<br>B. m<sup>2</sup><br>C. Nms-1<br>D. Nm s |
| 5 | On slightly disturbing a body which is an unstable equilibrium, its center of gravity | A. rises<br>B. falls<br>C. remains constant<br>D. first rises then falls |
| 6 | A stone attached to one end of a string is revolved around a stick so that the string winds on the stick and gets shortened) What is conserved) | A. angular momentum<br>B. kinetic energy<br>C. linear momentum<br>D. none of the above |
| 7 | The ratio of the SI unit to the C)G.S unit of torque is. | A. 10<sup>7</sup><br>B. 10<sup>9</sup><br>C. 10<sup>0</sup><br>D. 10<sup>3</sup> |
| 8 | A couple produces | A. linear motion<br>B. rotational motion<br>C. both (A) and (B)<br>D. None |
| 9 | Two satellites are going around the earth at a height of 250 km and 450 km respectively. If angular speed for both is same, then centripetal acceleration will be. | A. more for first<br>B. more for second<br>C. same for both<br>D. nothing can be decided |
| 10 | What happens to the centripetal acceleration of a particle, when its speed is doubled and angular velocity is halved? | A. halved<br>B. doubled<br>C. remain unchanged<br>D. becomes four times |
| 11 | If the radius of the circular path of particle going around the circle is doubled without changing its frequency of rotation, then centripetal force on it is. | A. doubled<br>B. halved<br>C. unchanged<br>D. quadrupled |
| 12 | A body of mass m tied to a string is moved in a vertical circle of radius r. the difference in tensions at the lowest point and the highest point is. | A. 2 mg<br>B. 4 mg<br>C. 6 □g<br>D. 8 mg |
| 13 | . A force "F1" acts on a body through distance "S1" in the direction of motion and does work "W1". Similarly another force "F2" act on same body through distance "S2" but in opposite to the direction of motion and does work "W2". Now if F1 = F2 and S1 = S2 then which statement is correct. | A. W1 = W2<br>B. W2< W2<br>C. W1 > W2<br>D. W1 = W2= 0 |
| 14 | Kinetic energy of a body moving with speed of 10 ms-1 is 30 J. If its speed becomes30 ms-1 then its K.E becomes | A. 10J<br>B. 270 J<br>C. 90J<br>D. 180 J |
| 15 | The time taken by an engine of power 10 kW to lift a mass of 200 kg to a heightof 40 m is (g + 10ms2) | A. 2 sec<br>B. 4 sec<br>C. 8 sec<br>D. 16sec |

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| 16 | Which of the following work is greater? | A. + 100J<br>B. 0 J<br>C. - 100J<br>D. Both A and B are equal |
| 17 | In a gravitational field when work done by gravity is negative then | A. P.E increases<br>B. P.E decrease<br>C. None<br>D. P.E remains same |
| 18 | If the velocity of a body becomes half, the kinetic energy of body will become | A. One fourth<br>B. Double<br>C. Four times<br>D. Half |
| 19 | A force of 6 N act horizontally on a stationary mass of 2kg for 4s. The kineticenergy in joule is | A. 12<br>B. 72<br>C. 56<br>D. 888 |
| 20 | When a person lifts a body from ground work done by lifting force is? | A. Positive<br>B. Negative<br>C. Zero<br>D. Half of positive maximum |
| 21 | Initially, four identical uniform blocks, each of mass m and thickness h, are spread on a table How much work is done on the blocks in stacking them on top of one another? | A. 2 mgh<br>B. 3 mgh<br>C. 4mgh<br>D. 6mgh |
| 22 | An electric motor exerts a force of 40 N on a cable and pulls it by a distance of 30 m in one minute. The power supplied by the motor in watts is | A. 20<br>B. 200<br>C. 2<br>D. 10 |
| 23 | A motor boat is travelling with a speed of 3.0 m/sec. If the force on it due to water flow is 500 N, the power of the boat is | A. 150 KW<br>B. 1.5 KW<br>C. heat energy<br>D. chemical energy |
| 24 | The energy stored in wound watch spring is | A. K.E.<br>B. P.E.<br>C. heat energy<br>D. chemical energy |
| 25 | If the stone is thrown up vertically and return to ground, its potential energy is maximum | A. during the upward journey<br>B. during the upward journey<br>C. at the maximum height<br>D. at the bottom |
| 26 | Two bodies moving towards each other collide and move away in opposite directions. There is some rise in temperature of bodies because a part of the kinetic energy is converted into | A. heat energy<br>B. electrical energy<br>C. nuclear energy<br>D. mechanical energy |
| 27 | If the K.E. of a body is increased by 300%, its momentum will increase by: | A. 100 %<br>B. 150 %<br>C. √300%<br>D. 175 % |
| 28 | If the momentum of a body is increased n times, its kinetic energy increases: | A. n times<br>B. 2 n times<br>C. √□ times<br>D. n 2 time |
| 29 | The body at rest may have: | A. Energy<br>B. Momentum<br>C. Speed<br>D. Velocity |
| 30 | A light and a heavy body have equal momenta. Which one has greater K.E? | A. The light body<br>B. The heavy body<br>C. The K.E are equa<br>D. Data is incomplete |
| 31 | Work done in raising a box depends on: | A. How fast it is raised<br>B. The strength of the man<br>C. The height by which it is raised<br>D. None of the above |
| 32 | Which of the following is a unit of energy? | A. unit<br>B. whatt<br>C. Horse Power<br>D. None of the above |
| | | A. Both parts will have numerically equal momentum<br>B. Lighter part will have more |

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| 33 | In an explosion a body breaks up into two pieces of unequal masses. In this: | B. Lighter part will have more momentum<br>C. Heavier part will have more momentum<br>D. Both parts will have equal kinetic energy |
| 34 | A 50 kg man with 20 kg load on his head climbs up 20 steps of 0.25 m height each. The work done in climbing is | A. 5 J<br>B. 350 J<br>C. 100 J<br>D. 3430 J |
| 35 | The energy which an -e acquires when accelerated through a potential difference of 1 volt is called? | A. 1 Joule<br>B. 1 Electron volt<br>C. 1 Erg<br>D. 1 Watt |
| 36 | A force □ = (□□̂+ □□̂) newton is applied over a particle which displaces it from its origin to the point □ = (□□̂− □□̂) meters. The work done on the particle is: | A. – 7 joules<br>B. +13 joules<br>C. + 7 joules<br>D. +11 joules |
| 37 | A body of mass m kg is lifted by a man to a height of one meter in 30 sec. Another man lifts the same mass to the same height in 60 sec. The work done by them are in the ratio | A. 1: 2<br>B. 1: 1<br>C. 2: 1<br>D. 4: 1 |
| 38 | You lift a heavy book from the floor of the room and keep it in the book-shelf having a height 2 m. In this process you take 5 seconds. The work done by you will depend upon: | A. Mass of the book and time taken<br>B. Weight of the book and height of the book-shelf<br>C. Height of the book-shelf and time taken<br>D. Mass of the book, height of the book-shelf and time taken |
| 39 | A body moves a distance of 10 m along a straight line under the action of a force of 5 N. If the work done is 25 joules, the angle which the force makes with the direction of motion of the body is? | A. 0 Degree<br>B. 30 Degree<br>C. 60 Degree<br>D. 90 Degree |
| 40 | The same retarding force is applied to stop a train. The train stops after 80 m. If the speed is doubled, then the Stopping distance will be: | A. The same<br>B. Doubled<br>C. Halved<br>D. Four times |