

## MDCAT Physics Chapter 4 Circular Motion MCQ's Test

Sr	Questions	Answers Choice
1	A point on the rim of a wheel 4m in diameter has a velocity of 1600 cm s <sup>-1</sup> . The angular velocity of the wheel is	A. $2 \text{ rad s}^{-1}$ B. $4 \text{ rad s}^{-1}$ C. $6 \text{ rad s}^{-1}$ D. $8 \text{ rad s}^{-1}$
2	A body crosses the topmost point of a vertical circle with critical speed. Its centripetal acceleration, when the string is horizontal will be	A. 4g B. 3g C. g D. 6g
3	The angular momentum changes from 2 units to 6 units in 4s. the torque is	A. 1 unit B. $\frac{3}{2}$ unit C. $\frac{1}{2}$ unit D. 4 unit
4	In uniform circular motion, the factor that remains constant is:	A. Linear velocity B. Acceleration C. Speed D. All of these
5	The work done to keep the satellite in the given orbit is.	A. Zero B. infinity C. unit D. can't be decided
6	A body is moving in a circle with a constant speed. it has	A. a constant velocity B. a constant acceleration C. a velocity of constant magnitude D. an acceleration of constant magnitude
7	The ratio of angular speeds of minute hand and hour hand of a watch is:	A. 1: 12 B. 6: 1 C. 12: 1 D. 1: 6
8	Torque is necessary for producing.	A. angular speed B. linear acceleration C. angular acceleration D. none of these
9	The time period of revolution of geostationary satellite is	A. 1440 minutes B. 24 minutes C. 84 minutes D. none of these
10	A couple produces	A. linear motion B. rotational motion C. both (A) and (B) D. None
11	A satellite moving round the earth constitute	A. An inertial frame of reference B. Non inertial frame C. Neither inertial nor non inertial D. Both inertial and non-inertial
12	In uniform circular motion, the factor that remains constant is	A. Linear velocity B. Centripetal force C. Acceleration D. speed
13	Two artificial satellites of unequal masses are revolving in a circular orbit around the earth with a constant speed. Their time periods:	A. Will be different B. Will depend on their masses C. Will be same D. Will depend upon the place of their projection
14	The ratio of the SI unit to the C.G.S unit of torque is.	A. $10^7$ B. $10^9$ C. $10^0$ D. $10^3$
15	A particle revolves round a circular path with a constant speed. The acceleration of the particle is	A. A long the circumference of the circle B. Along the tangent

C. Along the radius  
D. Zero

16 If a rotating body is moving counter clockwise, direction of angular velocity will be

A. along linear velocity  
B. towards the center  
C. along the axis of rotation  
D. away from center

17 A car of 1000kg traveling at 20m/sec rounds a curve of radius 100m. Find the necessary centripetal force

A.  $4 \times 10^3 \text{ kg m/s}^2$   
B.  $3 \times 10^3 \text{ kg m/s}^2$   
C.  $5 \times 10^3 \text{ kg m/s}^2$   
D.  $4.5 \times 10^3 \text{ kg m/s}^2$

18 Which statement about geostationary orbit is false?

A. A geostationary orbit must be directly above the equator  
B. All satellite in a geostationary orbit must have the same masses  
C. The period of geostationary orbit must be 24 hours  
D. There is only one possible radius for a geostationary

19 The radius of orbit of a geostationary satellite depends upon:

A. Mass of satellite and its time period  
B. Mass of satellite and mass of earth  
C. Mass of earth, mass of satellite and time period of satellite  
D. Mass of earth and time period of earth

20 When a particle moves in a circle the angle between it linear velocity and the angular velocity is always

A.  $0^\circ$   
B.  $180^\circ$   
C.  $90^\circ$   
D. none of them