

## Physics ECAT Pre Engineering Chapter 5 Circular Motion

Sr	Questions	Answers Choice
1	Centripetal acceleration is also called _____ acceleration	A. Tangential B. Radial C. Angular D. None of these
2	The useful unit of the angular displacement in SI unit is:	A. Degree B. Revolution C. Radian D. Metre
3	Which one is related to angular motion:	A. Moment of a force B. Moment of inertia C. Moment of momentum D. None of these
4	A body can have constant velocity when it follows:	A. A circular path B. A rectilinear path C. Trajectory of a projectile D. None of these
5	When a body moves along a circular path with constant speed, it has an acceleration, which is always directed	A. Along the tangent B. Towards the centre C. Away from the centre D. None of them
6	If a gymnast is sitting on a rotating stool with his arms outstretched, brings his arms towards the chest, then its angular velocity will:	A. Increase B. Decrease C. Remains constant D. None of these
7	Angular velocity is a:	A. Scalar quantity B. Vector quantity C. Complex quantity D. None of these
8	A car is turning around a corner at 10 m/sec as it travels along an arc of circle. If value of centripetal acceleration is $10 \text{ m/sec}^2$ in this case, find radius of the circular path:	A. 1 m B. 5 m C. 10 m D. 15 m
9	A body moving along the circumference of a circle of radius R completes one revolution. The radius of a covered path to the angle subtended at the centre is:	A. Radius of the circle B. Twice the radius C. Thrice the radius D. None of these
10	Conventionally the angular velocity is directed to an angle of:	A. $90^\circ$ to the axis of rotation B. $30^\circ$ to the axis of rotation C. $0^\circ$ to the axis of rotation D. None of the above
		A. Length equal to its diameter

11	Radian is defined as the angle subtended at the center of a circle by an arc of:	<p>B. Length equal to its radius</p> <p>C. Any length</p> <p>D. None of these</p>
12	One radian is:	<p>A. Greater than one degree</p> <p>B. Less than one degree</p> <p>C. Equal to degree</p> <p>D. none of these</p>
13	A stone tied to the end of a 20 cm long string is whirled in a horizontal circle. If centripetal acceleration is $9.8 \text{ m/sec}^2$ , then its angular velocity is rad/sec is:	<p>A. <math>22/7</math></p> <p>B. 7</p> <p>C. 14</p> <p>D. 21</p>
14	Final velocity of a hoop is _____ the final velocity of a disc having same mass and radius on coming down an inclined plane.	<p>A. Greater than</p> <p>B. smaller than</p> <p>C. Equal to</p> <p>D. None of these</p>
15	A flywheel accelerates from rest to an angular velocity of 7 rad/sec in 7 seconds. Its average acceleration will be:	<p>A. <math>49 \text{ rad/sec}^2</math></p> <p>B. <math>1 \text{ rad/sec}^2</math></p> <p>C. <math>0.16 \text{ rev/sec}^2</math></p> <p>D. Both A and C</p> <p>E. Both B and C</p>
16	A 1000 Kg car travelling with a speed of 90 km/hr turns around a curve of radius 0.1 km. The necessary centripetal force comes out to be:	<p>A. <math>8.1 \times 10^7 \text{ N}</math></p> <p>B. 625 N</p> <p>C. 6250 N</p> <p>D. None of these</p>
17	The net force acting on a 100 kg man standing in an elevator accelerating downward with a $= 9.8 \text{ m sec}^{-2}$ comes out to be	<p>A. 980 N</p> <p>B. 580 N</p> <p>C. 1380 N</p> <p>D. Zero</p>
18	Conventionally the angular velocity is directed at an angle of	<p>A. <math>90^\circ</math> to the axis of rotation</p> <p>B. <math>30^\circ</math> to the axis of rotation</p> <p>C. <math>0^\circ</math> to the axis of rotation</p> <p>D. None of the above</p>
19	The useful unit of angular replacement in SI unit is:	<p>A. Degree</p> <p>B. Revolution</p> <p>C. Radian</p> <p>D. Metre</p>
20	Einstein's theory about gravity is better than Newton's because it gave explanation of:	<p>A. Inverse square law</p> <p>B. Bending of light</p> <p>C. Both A and B</p> <p>D. None of above</p>