

## Physics ECAT Pre Engineering Chapter 3 Motion and Force

Sr	Questions	Answers Choice
1	A stone is dropped from rest from the top of a tower 19.6 m high. The distance traveled during the last second of its fall is (giving $g=9.8 \text{ m/s}^2$ )	A. 9.8 m B. 14.7 m C. 4.9 m D. 19.6 m
2	Change in momentum is one second is called:	A. Impulse B. Force C. Energy D. Work
3	In equation $F=ma$ , then mass 'm' is	A. rest mass B. variable mass C. inertial mass D. gravitational mass
4	If rope of lift breaks suddenly. The tension exerted by the surface of lift is ( $a$ =Acceleration of lift)	A. $mg$ B. $m(g+a)$ C. $m(g-a)$ D. 0
5	The path (or trajectory) described by a projectile is	A. a parabola B. a hyperbola C. a circle D. a straight line
6	A dirty carpet is to be cleaned by heating. This is in according with _____ law of motion.	A. First B. Second C. Third D. None of these
7	If the acceleration of a body is negative, then slope of the velocity-time graph will be:	A. Zero B. Positive C. Negative D. Infinity
8	Rocket engines lift a rocket from the earth surface, because hot gas with high velocity	A. Push against the air B. React against the rocket and push it up C. Heat up the air which lifts the rocket D. Push against the earth
9	The discuss used by athlete has a mass of 1 kg, its weight in newton is	A. 9.8 N B. 80 N C. 98 N D. 100 N
10	Tick the conservative force:	A. tension in a string B. Air resistance C. Elastic spring force D. Frictional force
11	To get a resultant displacement of 10 m, two displacement vectors of magnitude 6 m and 8 m should be combined	A. Parallel B. Antiparallel C. At angle $60^\circ$ D. Perpendicular to each other
12	Which one of the following is dimensionless.	A. Acceleration B. Velocity C. Density D. Angle
13	A body falls freely from rest. It covers as much distance in the last second of its motion as covered in the first three seconds. The body has fallen for a time of	A. 3 s B. 5 s C. 7 s D. 9 s
14	At the top of the trajectory of a projectile the acceleration is	A. The maximum B. The minimum C. Zero D. g

15	Acceleration produced in a body by the force varies	<p>A. inversely as the applied force</p> <p>B. directly as the applied force</p> <p>C. directly as the mass of the body</p> <p>D. none of them</p>
16	If $m$ means mass of gases ejected per second from a rocket and $v$ shows the change in velocity, then $mv$ is named as:	<p>A. Force</p> <p>B. Energy</p> <p>C. work</p> <p>D. impulse</p>
17	For a moving body, at any instant of time	<p>A. If the body is not moving the acceleration is necessarily zero</p> <p>B. If the body is slowing, the retardation is negative</p> <p>C. If the body is slowing, the distance is negative</p> <p>D. If displacement, velocity and acceleration at that instant are known, we can find the displacement at any given time in future</p>
18	If the velocity time graph is a straight line parallel to time-axis, then it means that:	<p>A. The body is moving with uniform velocity</p> <p>B. The body is moving with uniform acceleration</p> <p>C. The body is at rest</p> <p>D. None of above</p>
19	A train of 150 m length is going towards north direction at a speed of $10 \text{ ms}^{-1}$ . A parrot flies at a speed of $5 \text{ ms}^{-1}$ towards south direction parallel to the railway track. The time taken by the parrot to cross the train is equal to	<p>A. 12 s</p> <p>B. 8 s</p> <p>C. 15 s</p> <p>D. 10 s</p>
20	A dirty carpet is to be cleaned by heating. This is in accordance with _____ law of motion:	<p>A. First</p> <p>B. Second</p> <p>C. Third</p> <p>D. None of these</p>