

## Physics ECAT Pre Engineering Chapter 3 Motion and Force

Sr	Questions	Answers Choice
1	Flight of rocket in the space is an example of	A. Newton's first law B. <b>Newton's third law</b> C. Newton's second law D. all of them
2	If a ball comes back to its starting point after bouncing off the wall several times, then its	A. total displacement is zero B. average velocity is zero C. none of them D. <b>both of them</b>
3	The range of projectile is 50 m when $\theta$ is inclined with horizontal at $15^\circ$ . What is the range when $\theta$ becomes $45^\circ$ ?	A. 400 m B. 300 m C. 200 m D. <b>100 m</b>
4	Distance covered by a freely falling body in the first second of its motion will be:	A. <b>4.9 m</b> B. 9.8 m C. 19.6 m D. 29.4 m
5	A body of mass 5 kg is acted upon by a constant force of 20 n for 7 seconds. The total change in momentum will be:	A. 10 NS B. 100 NS C. <b>140 NS</b> D. 200 NS
6	The magnitude of the force producing an acceleration of $10 \text{ m/sec}^2$ in a body of mass 500 grams is:	A. 3 N B. 4 N C. <b>5 N</b> D. 6 N
7	When the mass of the colliding body is much larger than the mass of the body at rest, its velocity after collision.	A. Becomes half B. Becomes zero C. Remains same D. <b>Becomes double</b>
8	A particle of mass 0.5 g moving along x-axis is located of $x_1 = 15 \text{ m}$ at $t_1 = 5 \text{ s}$ and $x_2 = 33 \text{ m}$ at $t_2 = 13 \text{ s}$ its average velocity is	A. $6 \text{ m s}^{-1}$ B. $2.45 \text{ m s}^{-1}$ C. <b><math>2.25 \text{ m s}^{-1}</math></b> D. $4.45 \text{ m s}^{-1}$
9	One newton is a force that produces an acceleration of $0.5 \text{ m/sec}^2$ in a body of mass:	A. <b>2 Kg</b> B. 3 Kg C. 4 Kg D. 8 Kg
10	Graphs which are used to illustrate the variation of velocity of an object with time are called	A. distance time graphs B. speed time graphs C. <b>velocity time graphs</b> D. acceleration time graphs
11	Work done along a closed path in a gravitational field is:	A. Maximum B. Minimum C. <b>Zero</b> D. Unity
12	Which of the following four statements is false?	A. A body can have zero velocity and still be accelerated B. <b>A body can have a constant velocity and still have a varying speed</b> C. A body can have a constant speed and still have a varying velocity D. The direction of the velocity of a body can change when its acceleration is constant
13	The path (or trajectory) described by a projectile is	A. <b>a parabola</b> B. a hyperbola C. a circle D. a straight line
		A. The value of V is maximum if the body is thrown vertically downward B. The value of V is maximum if the

14	A body is thrown from a height $h$ with speed $u$ , it hits the ground with speed $V$	body is thrown vertically upwards C. The value of $V$ is minimum if the body is thrown horizontally D. The value of $V$ does not depend on the direction of which it is thrown
15	Acceleration produced in a body by a force varies	A. inversely as the applied force B. directly as the applied force C. directly as the mass of the body D. none of them
16	When a force is applied on a body, several effects are possible Which of the following effect could not occur?	A. the body rotates B. the body speeds up C. the mass of the body decreases D. the body changes its direction
17	What must be changing when a body is accelerating uniformly?	A. the force acting on a body B. the velocity of the body C. the mass of the body D. the speed of the body
18	By which velocity a ball be projected vertically so that the distance covered by it in 5th seconds is twice the distance it covers in its 6th second ( $g=10\text{m/s}^2$ )	A. 58.8 m/s B. 49 m/s C. 65 m/s D. 19.6 m/s
19	A body is dropped from a tower with zero velocity, reaches ground in 4s. The height of the tower is about	A. 80 m B. 20 m C. 160 m D. 40 m
20	Force is a:	A. Scalar quantity B. Base quantity C. Derived quantity D. None of these