ECAT Physics Online Test

Sr	Questions	Answers Choice
1	A boat of mass 40 kg is at rest, A dog of mass 4 kg moves in the boat with a velocity of 10 m/s. What is the velocity of boat?	A. 4 m/s B. 2 m/s C. 8 m/s D. 1 m/s
2	For a given angle of projection, if the time of flight of a projectile is doubled, the horizontal range will increases to	A. Four times B. Thrice C. Once D. Twice
3	Two bullets are fired simultaneously, horizontally and with different speeds from the same place. Which bullet will hit the ground first?	A. The faster one B. Depends on their mass C. The slower one D. Both will reach simultaneously
4	A the top of the trajectory of a projectile, the directions of its velocity and acceleration are	A. Perpendicular to each other B. Parallel to each other C. Inclined to each other at an angle of 45° D. Anitparallel to each other
5	Angular momentum	A. Scalar B. Axial vector C. Polar vector D. At 45° angle
6	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 m/s^s)	A. 9.8 m B. 14.7 m C. 4.9 m D. 19.6 m
7	The range of projectile is 50 m when θ is inclined with horizontal at 15°. What is the range when θ becomes 45°?	A. 400 m B. 300 m C. 200 m D. 100 m
8	A projectile on its path gets divided into two pieces at its highest point. Which is true?	A. Momentum increases B. Momentum decreases C. Kinetic energy increases D. Kinetic energy decreases
9	Which of the following statements for an object in equilibrium is not true?	A. The object must be at rest B. The object can be at rest C. The object is moving at constant speed D. The acceleration of the object is zero
10	Two projectiles are fired from the same point with the same speed at angles of projection 60° and 30° respectively. Which one of the following is true?	A. Their range will be same B. Their maximum height will be same C. Their landing velocity will be same D. Their time of flight will be same
11	Maximum height of a bullet when fixed at 30 with horizontal is 11 m. Then height when it is fired at 60° is	A. 22 m B. 6 m C. 33 m D. 7.8 m
12	Find the total displacement of a body in 8 seconds starting from rest with an acceleration of 20 cm/s^2	A. 0.064 m B. 640 cm C. 64 cm D. 64 m
13	A train is moving with a velocity of 25 m/s and a car is moving behind it by a velocity of 8 m/s in same direction. The relative velocity of train with respect to car is	A. 17 m/s B. 33 m/s C. 17.5 m/s D. none
		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	A ball is dropped vertically down and it takes time t to reach the ground. At time t/2	A. The ball had covered exactly half the distance B. The velocity of the ball was V/3 where V is the velocity when it reached the ground C. The ball had covered less than half the distance D. The ball had covered more than half the distance
16	A ball is dropped from a certain height and another ball is projected horizontally from the same point. Which of the following statement is correct?	A. Both hit the ground at the same veloctiy B. Both hit the ground at the same speed C. The change of velocity during the path for both balls is the same D. The change of speed during the path for both balls is the same
17	A man sitting in a bus travelling in a direction from west to east with a speed of 40 km/h observes that the rain drops are falling vertically down. To the another man standing on ground the rain will appear	A. To fall vertically down B. To fall at an angle going from west to east C. To fall at an angle going from east to west D. The information given is insufficient to decide the direction of rain
18	Range of a projectile is R, when the angle of projection is $30°$. Then, the value of the other angle of projection for the same range, is	A. $45°$ B. $60°$ C. $50°$ D. $40°$
19	If the water falls from a dam into a turbine wheel 19.6 m below, then the velocity of water at the turbine, is (Take g=9.8 m/s^2)	A. 9.8 m/s B. 19.6 m/s C. 39.2 m/s D. 98.0 m/s
20	If speed of electron is 5 x 10^{5}m/s. How long does it take one electron to transverse 1 m?	A. 1 x 10^6 B. 2 x 10^6 C. 2 x 10^5 D. 1 x 10^5
21	Distance traveled by a body falling from rest in the first, second and third second is in the ration of	A. 1 : 2 : 3 B. 1 : 3 : 5 C. 1 : 4 : 9 D. None of the above
22	A ball is dropped downwards After 1 second another ball is dropped downwards from the same point. What is the distance between them after 3 seconds	A. 25 m B. 20 m C. 50 m D. 9.8 m
23	If a train traveling at 72 kmph is to be brought to rest in a distance of 200 meters then its retardation should be	A. 20 ms^{-2} B. 10 ms^{-2} C. 2 ms^{-2} D. 1 ms^{-2}
24	A car travels first half distance between two places with a speed of 30 km/h and remaining half with a speed of 50 km/h. The average speed of the car is	A. 37.5 km/h B. 10 km/h C. 42 km/h D. 40 km/h
25	If an iron ball and a wooden ball of the same radius was released from a height 'h' in vacuum, then time taken by both of them to reach ground will be	A. Unequal B. Exactly equal C. Roughly equal D. Zero
26	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
27	A person is sitting in a traveling train and facing the engine. He tosses up a coin and the	A. Moving forward and gaining speed B. Moving forward and losing speed C. Moving forward with uniform speed

27	coin falls behind him. It can be concluded that the train is	C. Moving forward with uniform speed D. Moving backward with uniform speed
28	The mass of a body measured by a physical balance in a lift at rest is found to be m, if the lift is going up with an acceleration a, its mass will be measured as	A. $m(1 - a/g)$ B. $m(1 + a/g)$ C. m D. Zero
29	A lift is moving up with acceleration equal to 1/5 of that due to gravity. The apparent weight of a 60 kg man standing in lift is	A. 60 kg wt B. 72 kg wt C. 48 kg wt D. Zero
30	A monkey sits on the pan of spring scale kept in an elevator. The reading of the spring scale will be maximum when	A. Elevator is stationary B. Elevator cable breaks and it falls freely towards earth C. Elevator accelerates downwards D. Elevator accelerates upward