

(Study guide: questions minus choices)

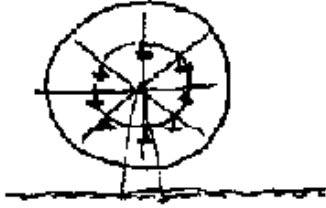
- 1) A sheet of paper can be withdrawn from under a container of milk without toppling it if the paper is jerked quickly.
- 2) When a rocket ship accelerating in outer space runs out of fuel it
- 3) If no external forces are acting on a moving object
- 4) Whirl a rock at the end of a string and it follows a circular path. If the string breaks,
- 5) A horse gallops a distance 10 kilometers in a time of 30 minutes.
- 6) If an object falling freely were equipped with an odometer to measure the distance it travels, then the amount of distance it travels
- 8) A man leans over the edge of a cliff and throws a rock upward at 4.9 m/s. Neglecting air resistance,
- 9) Disregarding air drag, how fast must you toss a ball straight up in order for
- 10) Your weight is
- 11) Your friend claims that it is just as hard to accelerate a car on a level surface on the moon as it is here on Earth.
- 12) A 10-kg brick and a 1-kg book are dropped in a vacuum.
- 13) An apple at rest weighs 1 N. The net force on the apple when it is in free fall is
- 14) A jumbo jet has a mass of 100,000 kg. The thrust for each of its four engines is 50,000 N.
- 15) A 500-N parachutist opens his chute and experiences an air resistance force of 800 N.

- 16) An coconut and a feather fall from a tree through the air to the ground below. The amount of air-resistance force is
- 17) An archer shoots an arrow. Consider the action force to be exerted by the bowstring against the arrow.
- 18) A automobile and a baby carriage traveling at the same speed collide head-on. The impact force is
- 19) A bird sitting on the limb of a tree is moving about 30 km/s with respect to the sun. If the bird takes 1 second to drop down to a worm below, the worm would be 30 km downrange from the bird when it reached the ground. This faulty reasoning is best countered
- 20) Two objects have the same size and shape, but one is much heavier than the other. When they are dropped simultaneously from a tower, they reach the ground at the same time, but the heavier one
- 21) When you jump from an elevated position you usually bend your knees upon reaching the ground. By doing this, you make the time of the impact about 10 times as great as for a stiff-legged landing
- 22) A 3-kg chunk of putty moving at 2 m/s collides with and sticks to a 5-kg bowling ball initially at rest.
- 23) An astronaut , floating alone in outer space, throws a baseball
- 24) A clerk can lift containers a vertical distance of 1 meter or can roll them up a 2 meter-long ramp to the same elevation.
- 25) After rolling halfway down an incline a marble's kinetic energy is
- 26) Both a 50-kg sack is lifted 2 meters from the ground and a 25-kg sack is lifted 4 meters in the same time.
- 27) A car moving at 50 km/hr skids 20 m with locked brakes. How far will the car skid with locked brakes if
- 28) A diver who weighs 500 N steps off a diving board that is 10m above the water. The diver hits the water with
- 29) When a rifle is fired it recoils as the bullet is set in motion. The rifle and bullet ideally acquire
- 30) A feather and a coin dropped in a vacuum fall with equal

31) On a balanced see saw, a boy three times as heavy as his partner sits

32) The famous Leaning Tower of Pisa doesn't topple over because

33) When a twirling ice skater brings her arms inward



34) A carnival has a Ferris wheel where the seats are located halfway between the center and outside rim. Compared with a Ferris wheel with seats on are on the outside rim,

35) To turn a stubborn screw, it is best to use a screwdriver that has a