

Review Questions – Forces of Nature on Vehicle

- 1) It is important to understand the _____ of _____ as they significantly affect your ability to control your vehicle.
- 2) True or False: Gravity is the force that pulls objects toward the center of the earth. It affects speed on hills. _____
- 3) True or False: When you are going downhill the force of gravity will cause you to go faster. You must compensate by shifting to a lower gear or braking. _____
- 4) The greater the speed the _____ the distance needed to stop the vehicle.
- 5) True or False: Because of gravity, your kinetic energy decreases when going up a hill, making it easier to stop. _____
- 6) You may be injured because of the inertia and momentum of loose objects that become airborne during _____.
- 7) Wearing a _____ while driving will stop the forward momentum of your body if you have a collision.
- 8) True or False: If you are hit from behind while stopped, you can experience a _____. A properly adjusted headrest can minimize this injury. _____
- 9) _____ energy is the energy a body possess because it is in motion.
- 10) True or False: Kinetic energy is usually absorbed by the brakes or engine compression in a controlled stop. _____
- 11) If kinetic energy is not absorbed by the brakes or engine compression, it must be absorbed by your vehicle or _____.
- 12) True or False: Going down a hill (gravity) with your speed increasing will increase the kinetic heat energy that must be absorbed. _____
- 13) Momentum is the force of a moving object. The momentum of an object is proportional to its _____ and _____.

- 14) True or False: Friction is the force caused by contact of one surface upon another, resulting in resistance of an object moving over a surface. _____
- 15) During braking, the friction between the tires and road and within the brakes converts into _____.
- 16) True or False: Changes in road surface (ice, rain, or snow) will increase the traction of your tires to the road. _____
- 17) Centrifugal force is the tendency for objects to be pulled _____ when rotating around a center.
- 18) To counteract centrifugal force on a non-banked curve, it is important to _____ before entering the curve.
- 19) True or False: The forces that stop your car in a head-on crash are greatest if you hit an immovable object (tree) because the momentum and kinetic energy of your car must be absorbed almost immediately. _____
- 20) You can reduce the force upon you and your car in a crash if you can _____ your path toward objects such as bushes, snow, and sand barrels to help absorb kinetic energy.
- 21) Energy absorbing bumpers, padded dashboards and safety glass are features which _____ the distance over which the impact occurs, hopefully minimizing injury.
- 22) The best protection you have against injury if involved in a collision is your _____.