Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Physics Test (AG)**

**Multiple Choice**

***Identify the letter of the choice that best completes the statement or answers the question.***

***Write the letter of the correct answer on your answer sheet.***

1. The graph illustrates the motion of a truck over a period of time. Which segment represents an acceleration of zero?

a. segment A b. segment B

c. segment C d. segment D

1. John walked 4 blocks to school each day for a week. Monday – Wednesday it took John 5 minutes.

Thursday and Friday it took him 3 minutes. John’s speed:

a. was constant each day b. decreased Thursday

c. increased Thursday d. increased only on Friday



1. What is the average speed of the vehicle whose motion is shown in the graph after four hours of travel?

a. 100 mph b. 25 mph

c. 4 mph d. 50 mph

1. Which measurements do you need to calculate speed?

a. Force and distance b. time and force

c. distance and time d. mass and velocity

1. If a runner completes a 100 meter race in 20 seconds, what is her speed?

a. 5 meters per second (m/s) b. 20 meters per second (m/s)

c. 10 meters per second (m/s) d. 50 meters per second (m/s)

1. The units for acceleration are:

a) m/sec b) m/sec²

c) sec d) (m/sec)²

1. What two things do you need to know to describe the velocity of an object

a. speed and direction b. time and distance

c. speed and time d. distance and direction

1. Which of the following is a measure of velocity?

a. 30 s b. 30 South

c. 30 m/s d. 30 m/s, South

1. Identify which of the following units of measurement are NOT speed units:

a. 30 meters/second left b. 45 meters/second

c. 25 km/hr d. 6 miles/hour

1. To keep a box moving across a carpeted floor, a mover must apply constant force. Which of the following forces is most resistant to the motion of the box?
   1. Air resistance acting on the box c. Gravity pulling on the box
   2. Friction between the box and floor d. Weight of the box
2. According to Newton’s first law, if a ball is moving through space and NO other forces are acting on it, the ball will:
   1. stop moving in 3.5 seconds c. moving upward over time
   2. move faster over time d. continue moving until another force acts on it
3. Who is the English physicist who described universal gravitation and the three laws of motion?
   1. Albert Einstein c. Socrates
   2. Thomas Edison d. Isaac Newton
4. What does Newton’s 3rd Law of Motion state?
   1. A physical body will remain at rest unless an external net force acts upon it.
   2. A physical body will continue to move at a constant velocity unless an external force acts on it.
   3. The net force on a body is equal to its mass multiplied by its acceleration.
   4. For every action there is an equal and opposite reaction.
5. According to Newton’s 3rd Law, what do we call the pair of forces acting on two objects in every interaction?
   1. Twist and Turn c. Up and Down
   2. Action and Reaction d. Kinetic and Static
6. The overall (total) force on an object is called the
7. Net force c. Some force
8. Big force d. Little force

**Short Answer**

***\*Solve the word problems on a separate sheet of paper by showing all of you work. \*Make sure to include the formula, substitution into formula, and circle the answer.***

***\*Do not forget your units.***

1. What is the speed of a cheetah that travels 112.0 meters in 4.0 seconds?
2. Calculate the average speed (in km/h) of a car stuck in traffic that drives 12 kilometers in 2 hours.
3. An airplane travels from St. Louis, Missouri to Portland, Oregon in 4.33 hours. If the distance traveled is 2,742 kilometers, what is the airplane’s average speed?
4. You ride your bike for a distance of 3,000 meters. You travel at a speed of 0.75 km/ minute. How many minutes does this take?
5. How far can a person run in 15 minutes if he or she runs at an average speed of 16 km/hr?

1. How much time would it take for an airplane to reach its destination if it traveled at an average speed of 790 kilometers/hour for a distance of 4,700 kilometers?
2. A runner covers the last straight stretch of a race in 4 s. During that time, he runs 9 m/s. How far he run?
3. A cruise ship travels east across a river at 19.0 meters per minute. If the river is 4,250 meters wide, how long does it take for the ship to reach the other side?
4. A 65 kg scooter accelerates at 10 m/s2. What force is the engine producing?
5. If a 53.5 kg platform diver is dives from the highest platform, what is her force upon entry? (Hint: Acceleration of gravity is 9.8 m/s2).