**ASHTS- NSMQ PHYSICS**

1. If a motor at moves in the north-west direction and covers a distance of 500m in 25s. Calculate its acceleration with respect to north and west direction.
2. A unit of measuring land is hecter which is equal to. If a mine hauls an area of 75hectres to depth of 20m. What is the volume of the pit in?
3. Below are initial and final positions of an object on the x-axis. Indicate whether the statements about the points is true or false.
4. (-3m, +5m) is a positive displacement
5. (+8m, -4m) is a positive displacement
6. (-2m, -7m) is a negative displacement
7. A body of mass 10kg was attached to a string and was set to fall to the ground. What was its acceleration if the tension in the string was 50N? [g=9.8m/s]
8. An object of mass 20kg was placed on a piston of diameter 28cm. Calculate the output force if the load to be lifted sits on surface. [g=9.8m/s]
9. Write the relationship between maximum static frictional force and normal force and clearly define each term in the equation.
10. Write the dimensions of gravitational constant G.
11. When a body is pressed against a rigid surface, the surface tends to produce a force on the body perpendicular to the surface. What is the name of that force?
12. A rope of length 14m was attached to a bob and was set into a circular motion. If the velocity of the bob was 4m/s. Find the period of the motion.
13. You drive a Toyota civic on a straight road for 8.4km at 70km/h at which you run out of gasoline. Over the 30minutes you walk another 2.0km to the gasoline station.
14. What is your overall displacement
15. What is the time interval from your starting point to the station
16. What is the average velocity from your starting point to the station

**CHEMISTRY**

1. What is the importance of a chemical formula of a compound?
2. In an experiment, sodium and potassium salts were formed form a reaction with chlorine. Which of the metals was more readily to react with chlorine and justify your answer.
3. According to the graph of ionization energy of period two elements, what would be the relationship between the ionization energies of nitrogen and oxygen?
4. Unlike noble gases, halogens are usually diatomic. Explain this phenomenon.
5. Defend why carbon dioxide is a non-polar compound.
6. What type of intermolecular forces exist between ammonia molecules and why.
7. Illustrate and describe the intermolecular forces present in aqueous sodium chloride.
8. At the Takoradi habour, inspectors want to measure the quantity of pollutants released into the water by a commercial ship. In a 100L volume of water collected near the ship, they found 25mg of pollutants. What is the concentration in ppm of pollutants near the ship?
9. Compute the percentage mass of chromium in potassium heptaoxodichromate (VI).

[ K=39, Cr=52, O=16]

1. What is the shape of and why.