**NAME…………………………………………………CLASS……… ADM.NO………...**

**JOINT EVALUATION**

**PHYSICS FORM THREE**

**MID TERM ONE YEAR 2021**

**TIME 1 HOUR 30 MIN**

Answer all questions in the space provided.

1. An oil drop of volume 0.6mm3 was placed on a clean water surface. It spreads to form a monoatomic circular patch of area 3000mm2. Use this data to calculate the diameter of a molecule of oil. (3 marks)
2. State two advantages of alkaline accumulator over lead-acid cell (2 marks)
3. The diagram below shows a system in equilibrium with the uniform rule supported at Q and resting horizontally.

 30cm 40cm

 Q

 X 180g

The rule is 1m long and weighs 1.8N. calculate the weight of the block X (3 marks)

1. A boat sent ultrasound signal to the bottom of the sea and its echo received after 10 seconds. If the wavelength of the sound is 0.05m and the frequency of the transmitter is 50KHz, calculate the depth of the sea (3 marks)
2. a) Differentiate between (2 marks)
3. Distance and displacement
4. Speed and velocity
5. A body moves 3000 meters due east in 40 sec then 4000 meters due north in 60 sec. calculate
6. Its average speed (3 marks)
7. Average velocity (4 marks)
8. A bomber flying horizontally at 100 m/s releases a bomb from a height of 3000 m. calculate the
9. Time taken for the bomb to hit the ground (3 marks)
10. Horizontal distance travelled before hitting the ground ` (2 marks)
11. a) Define the term refraction of light (1 mark)

b) A container full of water appears to be 8cm deep. If the speed of light in water is 2.25X108 m/s and in a vacuum is 3.0X108 m/s. calculate

1. Refractive index of water (3 marks)
2. The actual depth of the container (3 marks)
3. Vertical displacement (2 marks)
4. a) State the newtons second law of motion (1 mark)

b) A bullet of mass 0.006 kg is fired from a gun of mass 0.5kg. if the muzzle velocity of the bullet is 300 m/s, calculate the recoil velocity of the gun (3 marks)

1. a) The diagram below shows a u tube filled with two liquids X and Y. if the density of the liquid Y is 1.26g/cm3, determine the density of liquid X (3 marks)

 x

 20cm y 16cm

b) State two properties of a barometric liquid (2 marks)

1. a) Give FOUR properties of a thermometric liquid (4 marks)

b)A faulty thermometer reads 100c when dipped into melting ice and 900c when on steam at normal atmospheric pressure. Determine the reading of this thermometer when dipped into a liquid at 200c (3 marks)