Name................................................................ Adm. No....................... Stream............

ALLIANCE HIGH SCHOOL

PHYSICS DEPARTMENT

FORM 1, TERM 1, 2016 EXAMS

TIME: 2HOURS

**Instructions:** Answer All questions in the spaces provided

1. Define physics as a subject and explain how it is related to technology citing relevant example in this relationship                                                                          (3marks)

2. State any two general objectives for studying physics as a subject in the 8.4.4 curriculum(2marks)

3. The table below shows careers, causes leading to the career and the career person. Fill the table appropriately

| Career | Course leading to career | Career person |
|---|---|---|
|  |  | Architect |
| Electrical engineering |  |  |
|  |  | Dietician |
|  | Bachelor of veterinary medicine |  |
| Surveying |  |  |

                                                                                             (10marks)

4. State the main difference between a pipette and a burette (1mark)

5. a) Distinguish between a fundamental/basic physical quantity and a derived physical quantity giving an example in each case (3marks)

b) The table below shows some physical quantities and their symbols. Fill the table accordingly

| Physical Quantity | SI Unit | Symbol | Equivalent to |
|---|---|---|---|
| | | s | 1000 milliseconds |
| | Kilograms per cubic metre | | ............. $g/cm^3$ |
| | | | 1000 milliamperes |
| | | kg | ........... milligrams |
| Length | | | ........... micrometres |
| Volume | | | ............. $mm^3$ |
| | | $m^2$ | |

(10marks)

6. a) Define force and state its SI unit (2marks)

b) A force acting on a body may produce varying effects. List any four such effects (4marks)

7. In an experiment to determine the density of liquid X, the following results were obtained:

   Mass of empty bottle          =     32g
   Mass of bottle + water         =     57g
   Mass of bottle + liquid X      =     62g

   Use the information to determine the density of liquid X                    (4marks)

8. Figure 1 shows a map of Kikuyu Sub-county drawn on a scale of 1: 10000. Use the map to estimate the area of the sub-county in hectares                    (4marks)
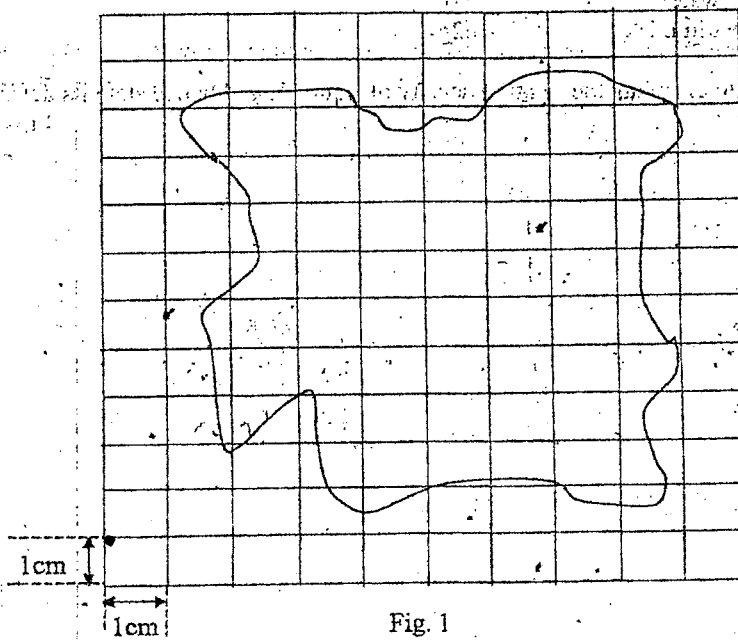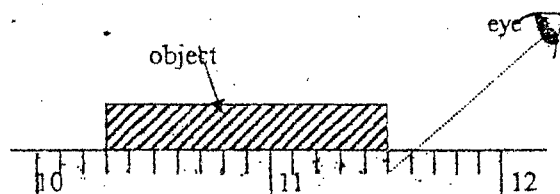


Fig. 1

9. Figure 2 below shows a student measuring the length of a block of wood using a metre rule.



3

a) What is the length of the block of wood

(1mark)

b) Name, explain and state the magnitude of the error that was responsible for the wrong value of the length as obtained by the student

(3marks)

10. A metallic rod of radius 7.0mm and length 200m is melted into a sphere. Calculate the radius of the sphere

(4marks)

11. In order to obtain accurate results while using a density bottle, a number of precautions must be adhered to. List the three such precautions

(3marks)

12. Form one students at AHS were asked to estimate the height of the tallest tree in the compound practically. They obtained the following results:

Length of the shadow of the tree    =    900cm
Length of the shadow of a student    =    1800cm
Height of the student    =    1.60m

Use this information to estimate the height of the tree

(3marks)

13. By use of illustrations, briefly describe how you would determine the volume of an irregular solid that floats in water using a eureka can stating the necessary precautions (5marks)

14. While measuring a length, a number of factors will influence the choice of a measuring instrument. List three such factors (3marks)

15. State any five rules that ensure your safety while working in the laboratory (5marks)