**S.3 MATHEMATICS ASSESSMENT TERM 1 2016**

**TIME: 1 hour 45minutes**

**Instructions**

Attempt all numbers **SECTION A (40MARKS)**

1. Simplify; . (4marsk)
2. A line whose gradient is 3 passes through the point . Find the;
3. Equation of the line
4. Y – intercept (4marks)
5. Factorise the expression and hence solve the equation

. (4marks)

1. Two similar beakers hold 125cm3 and 1litre respectively. If the smaller beaker is 12.5cm high, find the height of the larger one. (4marks)
2. In a class of 90 students, 50 offer Mathematics(M), 47 offer English(E) and 5 students offer neither Mathematics nor English. Find the number of students that offer,
3. All the two subjects
4. Mathematics but not English. (4marks)
5. Given that and . Find the values of and such that . (4marks)
6. The position vectors of P and Q are and respectively. Find the magnitude of . (4marks)
7. A scale on a map is 1 : 500,000. What distance in km do 11cm on the map represent? (4marks)
8. The diagram shows a net of a right pyramid on a square base. The sides of a square base are 18cm each. Find the height of the vertex of the pyramid from the base. (4marks)

18cm

15cm

1. Solve the equation; . (4marks)

**SECTION B (60MARKS)**

11. a) Simplify; . (4marks)

b) Without using a calculator or tables, find the value of

. (4marks)

c) Use tables of logarithms to evaluate; . (4marks)

1. In a class of 40 students, 18 offer Luganda (L), 15 offer Art(A) and 22 offer CRE (C ) . 7 offer L and A, 9 offer A and C, 8 offer L and C. 4 offer all the three subjects.
2. Represent the given information on a Venn diagram. (6marks)
3. Find the number of students who do not offer any of the three subjects.

(2marks)

1. Find the probability that a student chosen at random only offers;
2. One subject
3. Two subjects (4marks)
4. a) y is directly proportional to the cube of . when , find the value of when (4marks)

b) Given that m varies inversely as n and that m = 4 when n = 6, find m when

n = 3. (4marks)

c) Given that t varies as and varies inversely as the square of .

i) Find the equation of proportionality when t = 10, x = 8 and y = 2.

ii) Hence find the value of when t = 4 and y = 5. (4marks)

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