The Co-operative University College of Kenya

(A Constituent College of Jomo Kenyatta University of Agriculture & Technology)

END OF SEMESTER EXAMINATIONS APRIL - 2015

EXAMINATIONS FOR DIPLOMA IN CO-OPERATIVE MANAGEMENT

UNIT CODE: MCBM 0104

UNIT TITLE: GEOMETRY AND TRIGINOMETRY

DATE: **TIME:**

INSTRUCTIONS:
Answer question **ONE (compulsory)** and any other **TWO** questions
Show **ALL** your workings

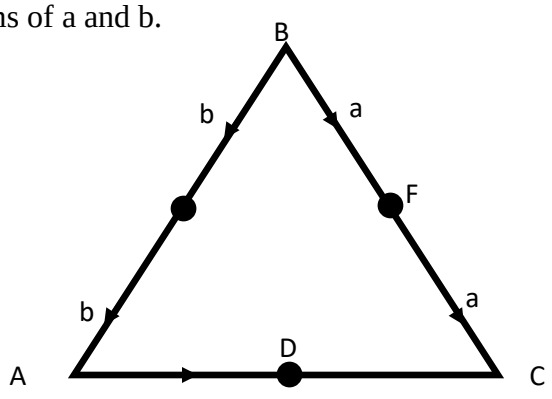
Question One

a) A ladder leans against a wall so that its foot is 2.5cm away from the foot of the wall and its top is 4 meters up the wall.
   i. Calculate the angle it makes with the ground (5 Marks)
   ii. The length of the ladder (5 Marks)

b) A trapezium ABCD is such that its parallel sides are 18cm and 26cm respectively and AB= 90cm. Find the area of the area of the trapezium if angle ABC=45°. (5 Marks)

c) Calculate the length of the diagonal of rectangle whose sides are 6cm and 8cm long (3 Marks)

d) The figure below shows ABC a triangle in which the midpoints of AB,, BC and AC are E,F and D respectively. Vector AB= - 2b while BC=2a. rewrite each of the following vectors terms of a and b.



   i. BF
   ii. AF

iii. AC
iv. DC
v. DA
vi. BD (8 Marks)

e) The co-ordinate of points A, B and C are (0, -4), (2,-1) and (4,2) respectively.
   i. Deduce the position vectors of A, B and C. (2 Marks)
   ii. Find the lengths of AB and AC (2 Marks)
   iii. Show that the points A, B and C are Collinear (3 Marks)

QUESTION TWO

The perimeter of a triangle is 22cm. if one of the sides is 9cm. find the other sides. If the area of the triangle is $20.976cm^2$. (10 Marks)

QUESTION THREE

An isosceles triangle is such that AB=AC=8cm. if the perpendicular distance from A to BC is 6cm. Find

a) The length of BC (5 Marks)
b) Angle BAC (5 Marks)

QUESTION FOUR

A metal rod of 20metres length has an isosceles triangular base, where the equal sides are 12 centimeters each. If the included angle in the base is 40^0, Calculate:

a) The area of the cross-section (5 Marks)
b) The volume of the metal rod (5 Marks)

QUESTION FIVE

From a window 25m above a street, the angle of elevation of the top of a wall on the opposite side is15^0. If the angle of depression of the base of the wall from the window is15^0. If the angle of depression of the base of the wall from the window is 35^0, find:

a) The width of the street (5 Marks)
b) The height of the wall on the opposite side (5 Marks)