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Mathematics
Time: $2\frac{1}{4}$ hours

KIYINDA ISLAMIC INSTITUTE
Lower Uganda Certificate of Education
MID term 3 Assessment 2024
S.3 MATHEMATICS
2 HOURS: 15 MINUTES

INSTRUCTIONS:

- ✓ Attempt **ALL** items in this paper
- ✓ Poor handwriting and organization of work may lead to loss of scores
- ✓ Silent, non programmable scientific calculators and mathematical tables with a list of formulae may be used.

ITEM 1

Two friends Kelvin and John started a poultry project to which Kelvin contributed UGX 750,000 while John contributed 20% more than what Kelvin contributed. They agreed to save $\frac{1}{5}$ of their gross profit on their joint account and a further 20% of the remainder to buy materials for the new products thereafter shares the net profit in the ratio of their initial contribution.

At the end of their first year of operation they made gross profit amounting to three million, one hundred sixty thousand shillings .Kelvin deposited John's share on his account but John was not sure if it was the actual amount he was supposed to get so, he sought of your help to avoid doubting.

John sent you to withdraw some money from his account but had forgotten the pin. However, he remembered that he had saved it as 179 in decimal base which he converts to base five to get the actual pin.

Task:

(a) Determine the actual amount that was to be deposited on his account
(b) Assist John to discover the actual pin.

ITEM 2

The government has just created Sub County and the sub county chief was tasked to find out the administrative boundaries of his sub county. He went to the land board and was given the co-ordinate mark points of the boundaries.

Points	A	B	C	D	E	F	G	H	I
X	−1	0	1	2	3	4	5	6	7
Y	15	8	3	0	−1	0	3	8	15

The purpose of the co-ordinates was to guide the council plan for the central location of the sub-county head quarters. According to the plan, a road was to be constructed from B to H where their New Health centre III was.

Task: Help the sub-county

  (a) Chief to draw the accurate boundaries of the sub-county.
  (b) Chief to determine the equation of the boundaries of the sub-county
  (c) Engineer to estimate the length of the road
  (d) Chief to determine the location of the sub-county.

ITEM 3

The local government surveyed a hundred sixty traders to highlight on the number of traders selling one crop only in order to address to issues of crop sustainability in a particular market. The survey revealed that 70 sell maize, 90 traders sell cassava and half of the traders sell yam. it was noted that some traders in the market sell more than one type of crop , 26 traders sell both cassava and maize , 30 sell both cassava and yam and 40 sell both yam and maize.

Task:

(a) Determine the number of traders that sell only one crop.
(b) What is the chance of traders selected selling two or more crops in the market?

ITEM 4

Your friend a broad sent you money to buy for him a plot of land which is triangular in shape. One side of the plot is $30m$ and the other side is $40m$. The two sides intersect at angle of 75°

He wants to construct a circular house touching all the sides of his plot.

He wants to know the total cost for digging the foundation of his house only. The workers have told you that each meter cots UGX 5,000 to be dug.

Task: help your friend to

(a) Construct an accurate design of house touching all the sides of his plot.
(b) Know the total amount needed to dig the foundation of his house.
(c) How much will you tell your friend in US dollars? If the bank sells and buys currency as follows ;

Currency	Buying (UGX)	Selling (UGX)
1 US Dollar ($)	3,5550.30	3,675.90
1 pound sterling (€)	4,650	4,700

END