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456/1

MATHEMATICS

Paper 1

31st March 2025

2 hours

NAME:.....SIGN

ST. PATRICK'S HIGH SCHOOL-HOIMA

SENIOR TWO

MATHEMATICS

Paper 1

2 hours

INSTRUCTIONS TO CANDIDATES

- This paper contains **four (4)** items
- Attempt **3** items in this paper in total
- Item **one** and item **two** are **compulsory**
- Between item **three** and item **four** attempt **one** item
- Begin each question on a **fresh page**
- All necessary working and explanations should be written on the answer sheets provided
- Graph papers are provided

| | FOR EXAMINER'S USE ONLY | | |
|----------------|--------------------------------|----------|------------|
| ITEM ATTEMPTED | 1 | 2 | 3/4 |
| SCORES | | | |

ITEM ONE

A woman whose husband lives abroad has been sent money for their two children with instructions on how to spend the money. She has received two million three hundred and eighty thousand shilling only with 40% to be used for the son's fees and $\frac{1}{2}$ of the remainder on the daughter's fees, ugx 100,000 is to be used for transport to school and the rest given to the children for their shopping. She has asked you for help on how to allocate the money as instructed but she decided that she would give the children their total amount for them to shop for what they want.

Of the children, the girl asks her brother that they should play a game where the winner will get 3 parts while the loser gets 2 parts of the shopping money. The girl has her card with the number 7 and asks the brother to randomly pick a card out of five cards each with digits in binary base. He is required to convert the number on his card to decimal base. If his number turns out to be greater than that of her sister then he wins. The boy picks a card with the number 1101.

Task

- (a) Show how you can help the woman to determine the different amount as she has been instructed.
- (b) Who of the children will get the most amount of pocket money and how much will it be?

ITEM TWO

A man borrowed UGX 4,800,000 from the bank at a simple interest of 20% and he was to pay back by the end of 3 years. The years are almost coming to an end but he has not made the required amount yet.

He decides to sell his car at UGX 14,000,000 to raise the money to pay the loan. The buyer he got asked for a discount of 10% of the amount, the broker charges a commission of 5% on the amount sold. The LC I also requested for UGX 450,000 to sign the agreements. He is also sure if the amount he will remain with will be enough to cover the loan.

TASK

- (a) (i) How much loan amount is he to pay to the bank?
- (ii) Will he be able to pay back the loan amount if sells the car?

ITEM THREE

A student from a university in USA is planning to come to Uganda for research. He wants to go to Gulu and Kisoro districts, he has US dollars 8200 that he will use during his stay and will be required to exchange it for Uganda shillings at an exchange rate of 1 dollar for UGX 3800. He contacts a company that can fly him to his destinations. On arrival, the company informs him that they will fly from Entebbe to Gulu a distance of 275 km on a bearing of 340° , from Gulu to Kisoro the distance is 390 km away on a bearing of 219° . From Kisoro, they will fly directly back to Entebbe.

The plane charges UGX 25,000 from every kilometer of distance covered.

Task

- How much will the students get in Uganda shillings after exchange?
- Determine the cost of transport that the students will have to spend

ITEM FOUR

The authorities on your area have realized that the time taken by house hold in for treatment at the village. Health Centre is becoming unbearable due to long queues. This has resulted into numerous quarrels among locals in a bid to get treatment. They were informed by the district authorities that the budget an only cater for addition of a health hospital in a community whose average waiting time for treatment is above 3hours 30min

On a given day, the chairperson LC III led a team that collected data for the time taken by 40 people in waiting for treatment at the hospital and is presented ss shown below.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 4 | 6 | 4 | 3 | 1 | 3 | 4 | 6 | 5 |
| 2 | 4 | 6 | 4 | 3 | 3 | 4 | 6 | 4 | 3 |
| 2 | 3 | 5 | 6 | 5 | 2 | 3 | 6 | 5 | 5 |
| 2 | 3 | 7 | 5 | 4 | 2 | 4 | 7 | 5 | 3 |

Task

- Represent the above information above in a tabular format that give easy understanding of the information.
- Help the team to present the information on a bar chart that would make the district authorities better understand the situation.
- Describe with reason the situation using a bar chart you have down.
- Analyze the information and advise the local authorities on whether the community deserves a bore hall.

EnD