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MATHEMATICS

Paper 1

2024

2 hours

SAYIDINA ABUBAKAR SECONDARY SCHOOL

MATHEMATICS DEPARTMENT

S.3 END OF TERM 2 ASSESEMENT

MATHEMATICS

Paper 1

2 hours

INSTRUCTIONS TO STUDENTS:

- Attempt **ALL** items
- **All** answers **must** be written in the answer booklet(s) provided.
- Graph paper is provided, use them where necessary.
- Silent, non-programmable scientific calculators and mathematical tables with a list of formulae may be used.

Answer all the items (all items are compulsory).

Item 1.

A Muslim tourist visited your village and went to your home seeking for help. He has got a lot of interest in visiting the following places around your village; museum, hospital, game park, and school. However, he is having a challenge in identifying the location of different places he would wish to visit and the amount of fuel to use. The places are located as follows, the game park is located **10km West** and **20km South** of your home. The school is located **10km East** of your home. The hospital is located **50km East** and **40km North** of your home. The museum is located **30km East** and **20km North** of game park. His vehicle consumes $\frac{1}{4}$ a litre of fuel for every **2km** travelled

Task:

- (a) Clearly show the location of each place above from your home in column vector form and direct the tourist where the museum is located from your home.
- (b) Determine the total distance he will have to travel from the school to the game park if he is to follow the direct route, compute the amount of fuel needed to travel this distance
- (c) Determine whether the location of the game park, school and hospital lie in a straight line or not. Give a reason
- (d) The mosque is located on the direct route connecting the school to the hospital. From the school to the mosque one need to cover half a distance of what he/ she is suppose to cover in travelling using the same direct route from school to the hospital. Direct the tourist where he can conduct his prayers if he is to use this mosque.

Item 2.

Mr. Kasirye a poor man in kabasanda can not provide all the items that his family need to celebrate Eid. His wife will leave him (**divorce**) immediately if he can't cover up a budget of just **UGX. 54000** for this day. He feels pressured, got a loan and decides to start moving around the village buying mature cocks at **UGX 18,000** per cock. He later grouped them into two groups: Group X containing all the cocks weighing above the middle weight and Group Y containing all the cocks weighing less than the middle weight. He measured the weights of the cocks (in grammes) before sale and recorded them as below

50	53	52	49	30
51	55	31	40	43
34	35	45	32	60
53	42	31	63	70
72	73	72	65	54
44	34	56	47	39
55	71	61	56	67
63	48	53	62	51
50	69	41	55	64
67	42	52	43	54

Group X cocks will be sold at **UGX 21000** each and Group Y cocks will be sold at **UGX. 19500** each. He will later use the profit obtained from this sale to cover up the family budget for Eid celebration.

Task:

- (a) Display the weight of cocks measured by this man in a suitable statistical diagram with classes of class width **10** starting with **30-39**
- (b) If he sells all the cocks at a planned selling price, determine whether his wife may leave the family(divorce) or continue with this family. Give a reason.

Item 3.

A football game competition has been organised between four schools Sayidina SS, Gombe SS, Kibiibi SS and Kaggulwe. The organizing committee is facing a challenge on how best they can distribute awards to these schools according to their performance. The following data were collected during the overall competition according to the number of games won, lost and drawn. Six games were played by each team.

- Gombe SS **won 1, lost 2 and drew 3** games
- Kibibbi SS **lost 1, won 2 and drew 3** games
- Sayidina SS **won 4 and drew 2** games
- Kaggulwe **won 1, drew 2 and lost 3** games

A win is worth **3** points, a draw is **1** point and a loss is **0** point. The award is to be given according to the position a school finish in this competition as summarized in the table 1 below

Position	Award
1st (WINNERS)	Golden cup and Ugsh. 2000000
2nd	Ugsh. 800000
3rd	Ugsh. 300000 and 5 new balls
4th	A dozen of balls

Table 1

Task:

- (a) Form suitable matrices to display the information above and use it to help the committee distributes the awards amongst these schools without fear or favour.
- (b) If Sayidina is to be deducted 5 points due to violation of the game rules. What will be its new position in this tournament?

END