KIYALA HIGH SCHOOL

MID-TERM TWO ASSESSMENT TEST 2024

MATHIMATICS

S.4

Time: *2 Hours: 30 minutes*

INSTRUCTIONS:

➢ *The paper contains* **two** *sections* **A** *and* **B** *with* **six items**
➢ *Attempt* **all the items** *in this section A*
➢ *Section* **B** *contains* **four item**, *attempt* **only two**
➢ *All the questions carry equal scores*

SECTION A

Item 1

Elimu School bought 25 textbooks and 35 exercise books for 135,000 shillings from Kampala General bookshop. From the same bookshop, Samo school bought 21 textbooks and 38 exercise books and spent 13,000 shillings less than Elimu school.

However, in Soroti cheap bookshop the cost of a textbook was 5% less and that of an exercise book was 5% more than in Kampala General bookshop. Mengo school bought the same number of textbooks and exercise books as Elimu school in Soroti cheap bookshop.

Task

a) As a senior four students, help Elimu schools and Soma schools to find out the price of each item in Kampala general shop.
b) What is the difference in the amount spent by Mengo school and Elimu school?

Item 2

Mr. Kato is a business man who deals in an agricultural produce business. He visited four markets in week two of the month of march 2024. In Nakasero Market (N), he bought 3 bags of beans, 5 bags of maize, 10 bags of potatoes and 3 bags of millet. In Gayaza market (G), he bought 1 bag of beans, 4 bags of potatoes and 2 bags of millet.

In Jinja market (J), he bought 4 bags of beans, 3 bags of maize, 6 bags of potatoes and 1 bag of millet. In Masaka market (M), he bought 5 bags of beans and 1 bag of maize,

Mr. Kato bought each bag of beans at 45,000 shillings, a bag of maize at 30,000 shillings, a bag of potatoes at 15,000 shillings and a bag of millet at 50,000 shillings.

However, since he is a business man, he later sold off all the produce he had bought at 50,000 shillings per bag of beans, 35,000 shillings per bag of maize, 18,000 shillings per bag of potatoes and 55,000 shillings per bag of millet.

Task

  a) Assist Mr. Kato to summarize the above information in matrix form.
  b) Using your knowledge of matrix multiplication, help him to know the amount of money spent on the produce in each market.
  c) With clear evidence, help him to know whether he made a loss or profit.

SECTION B

Item 3

The government of Uganda through Mulago hospital carried out free medical checkup for its state ministers in order to enable them attend the allied membership meeting (NAM) which took place in Uganda at the start of the year 2024.

However, each minister was weighed and the masses of those who attended the medical health function were recorded as follows.

64	58	52	73	62	50	60	64
49	47	58	45	58	74	66	73
48	46	55	52	51	69	59	44
60	42	48	54	73	61	58	50
41	53	54	46	43	61	67	70

Task

  a) Form a frequency distribution table using classes of sizes 5 and starting with class 40 to 44.
  b) Giving a reason, based on the statistics calculations. What do you think was the average weight and most appearing weight?
  c) Assuming you are the medical doctor who carried out the test, represent the information on a statistical graph to obtain the modal weight.

Item 4

Mr. Livingstone is a very rich man in Kampala city where he has constructed 36 houses. He wants to paint his houses by either green, white or black colours. Of these, 10 house must have to be painted with green colours and 6 houses must be painted by black colour. The 5 houses must be painted with green and white, 8 white and black and 4 houses must be painted with green and black. All houses which are painted white are three more than those which are painted black.

Task

   a) Determine the number of houses that were painted with all the three different colours.
   b) Determine the number of houses painted with at least two of each of the three colours.
   c) If the house is picked at random, what is the probability that it is a black or white colour only.

Item 5

You moved 5 km from your class while walking in the Northwest direction to the staffroom looking for the teacher. Reaching the staffroom, you were told that the teacher is in the kitchen, so you turned in the 180^0 direction and moved 6 km towards the teacher. Reaching the kitchen, you realized that you had a wrong book. You want to go back to class to get the actual book but using a different pathway since the school has many pathways.

Task

   a) Accurately illustrate how you moved from the class to the teacher in the beginning.
   b) From your illustration, which other pathway will you take to return to class.
   c) On which bearing will you turn for you to take the pathway
   d) How far is the park from the class using that pathway.
   e) In comparison to the first distance you moved, is it wise to choose that pathway? Give reason for your answer.

Item 6

Your head teacher of the school wants to solve the problem of too much heat in senior four classrooms especially after lunch. He decided to purchase 6 fans that will be installed in class. The shop keeper offered to give a discount of 10% on each fan bought on cash basis. He also accepts installments as long as the buyer pays a deposit of 50% on each fan. When the buyers choose to buy in installments, each installment is either 12,000 shillings per month for 6 months or 3,000 shillings per week for 25 weeks. Each fan has a market price of 90,000 shillings.

Task

As a learner of mathematics, advise the head teacher on the best option that will minimize the cost while buying the fans.

GOODLUCK