Candidate's Name: ……..…….... Sign: ……..……
456/1
MATHEMATICS
Paper 1
2025
$2^{1}/_{4}$ hours

THE SYNDICATE ASSESSMENT BOARD (TSAB)
Uganda Certificate of Lower Secondary Education
MATHEMATICS
PAPER 1
2 hours 15 minutes

INSTRUCTIONS TO CANDIDATES:

- This paper has two sections; A and B. It consists of six examination items.
- Section A has two compulsory items.
- Section B has two parts; I and II. Answer one item from each part.
- Answer four examination items in all.
- All answers must be written in the answer booklets provided.
- Graph paper is provided.
- Silent non-programmable scientific calculators may be used.

SECTION A

Answer **both** items in this section.

ITEM 1

Mr. Kitamirike has got a huge land that has been underutilized for quit a long period of time. He has decided to use half of the land for planting trees, a third of the remainder for constructing his home and the rest of the land that remains he is to sell it off. After dividing the land, he realizes that the land for constructing the home measures 5 acres.

On the land for constructing his home, he wants to dig a soak pit 10 feet deep. On asking the Chairperson LCI of his village, he found out that 12 men can take 8days to dig a soak pit 6 feet deep.

To supervise the work being done at site, Mr.Kitamirike comes to site every after six days and his wife comes to site every after five days.

Task:

a) If 1 acre of land in that area is bought at ugx.8, 500,000. How much money will Mr.kitamirike get after selling his remaining land?
b) On the 12 men available he has added more 4 men that work at the same rate, how many days will all the men working together take to dig the soak pit of 10 feet deep that he wants?
c) If today Mr.Kitamirike and his wife were all on site to supervise work being done, after how many days will this again happen?

ITEM 2

Kakembo is planning for a small birthday party for his son and wishes to spend shs98,000 to buy 5 kg of meat and 7 kg of rice. However, some guests that he had invited communicated that they would not make it for the party. Therefore, he had to reduce both quantities by 2 kg hence leading to a reduction in his expenditure by shs32,000. When Kakembo went to the market, there was an 80% increase in the price of each kilogram of meat and an offer given to him on rice as 25% discount on each kilogram of rice.

Tasks:

a) Help Kakembo to estimate the price of meat and the rice per kilogram.
b) What amount does he pay in order for the party to be a success?

SECTION B

This section has **two** parts; I and II

Part I

Answer **one** item from this part.

ITEM 3

A parent intends to make shopping of scholastic materials for his children who are going back to school for a new term by the names of Jane, Mary and Darin. They budgeted as below basing on the list of requirements that they were given by their class teachers.

- Jane: 6 exercise, 3 pencils, 2 Graph books, 3 pens
- Mary: 3 pencils, 1 Graph book, 6 exercise books, 3 pens
- Darien: 2 Graph books, 4 exercise books, 3 pencils and 5 pens

At that time the prices were 1 Graph book shs2000, 1 pencil shs100, 1 exercise book shs1,500 and 1 pen shs500. On reaching school they found out that the canteen manager had increased prices of the items by 10% and also they found out that the school administration had decided that on each item listed theyshould increase the number for each by 2 since school administration had decided that the students extend by two weeks when the term ends in order to compensate for the time students had lost the previous term. Before leaving their home, they were given by their father shs200, 800/= so that they can finish the clearing process at school and then after wards they share equally the remaining money to be used as their pocket money.

Task:

a) Assuming they were to buy the items before going to school, using the matrices help the father to determine how much he would give to each child.
b) By use of matrices determine how much each child paid to the canteen attendant in order to acquire the items.
c) Help the children determine how much each shared as pocket money after buying the items from the school canteen.

ITEM 4

A school is wishing to offer bursaries to sports men and women as long as more than 60% play at least one of the games in Football (F), Net ball (N), and Basketball(B) while more than 40% must know how to play at least two of the three games. It was discovered that out of 100 students who had applied, 40 student played football, 45 played Netball while 50 played Basketball. 24, 18 and 19 students played Football and Netball, Football and Basketball and Basketball and Netball respectively. 18 students applied but did not know how to play any of the three games.

Task:

a) Basing on the calculation from the information given, advise whether the school should offer sports bursaries.
b) Calculate the probability that a student picked at random played only one sport game.

Part II

Answer **one** item from this part.

ITEM 5

Mariam has a room that she plans to use as a hair salon. She has a wall paper of $4.7m^2$. The wall she plans to cover with the paper is 240 cm by 300 cm. She knows the wall paper she has is not enough. So she needs your advice on how much more she should buy. A roll of 10 m^2 of wall paper is sold at UGX 32,000. She also [plans to use three employees and pay each of her employees a gross monthly salary of UGX350,000. The gross monthly salary includes a non- taxable transport allowance of UGX 90,000. However, before she pays them, she has to deduct income tax as a requirement by the tax authority. The tax bands are shown the table below.

Monthly taxable income (shillings)	**Tax rate (%)**
0-100,000	0
100,001-200,000	5
200,001-300,000	15

Mariam is having difficulty in using the tax bands.

Task:

a) How many more square meters of wall paper should Mariam buy?
b) How much will she pay for the extra wall paper?
c) What is the total amount of income tax Mariam will deduct from her employees?
d) How much will she pay each of the employees as net salary?

ITEM 6

Your brother wants to design a children's playground. The playground will have a triangular garden and a circular fence around the garden. The whole two sides of the rectangular garden will measure 50m and 70m, and the angle between them will be 45^0.

Your brother also wants to construct a circular fence around the garden such that the circular fence perfectly touches the three vertices of the triangular garden. Your brother intends to put pavers in the region outside the triangular garden but inside the circular fence. Each square meter of pavers costs shs35, 000.

Your brother needs help in identifying the type of triangle represented by the triangular garden, coming up with an accurate design of the playground as well as the cost of the pavers.

Task:

Help your brother to:

a) Construct an accurate design of the children's playground.
b) Identify the type of triangle represented by the triangular garden and give a reason for your answer.
c) Determine the amount of money needed to buy the pavers.

Practice makes mathematics easier.

END