# JOURNEY OF SUCCESS EXAMINATIONS BOARD

Uganda Certificate of Lower Secondary Education

MOCK ASSESSMENTS 2024

MATHEMATICS

Paper 1

2 hours 15 minutes

## INSTRUCTIONS TO CANDIDATES

This paper consists of two sections; A and B. it has 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.

Any additional item(s) answered will not be scored.

All answers must be written in the answer booklet(s) provided.

Graph paper is provided. Silent, non-programmable scientific calculations and mathematical tables with a list of formulae may be used.

# SECTION A

## (Answer all items in this section)

### ITEM 1

St. Charles had 600 students in term one and the caterer was using 20kg of beans, 150kg of high Quality maize flour for posho and also 30kg of low quality flour for porridge all on each day. The school caterer left the school without explaining how he was measuring these quantities to be enough for the students. This affected the school in the second term since the students increased and all students were complaining. The school has now brought a new caterer to save the situation in this new term when the students are now 900 who are supposed to eat.

The director has provided him the following to use each day;

25kg of beans,

200kg of high quality maize flour and

40kg of low quality maize flour.

The caterer is sure that these quantities will not be enough for the students like it was in first term such that he can secure the new job.

The director has told him to produce an evidence for his argument since the commodities are expensive as summarized below.

Beans were bought at SHS; 4000 per kg

High quality maize flour SHS:2500 per kg

Low quality maize flour SHS: 1700 per kg.

### Task

a) Make an analysis based on calculations to help the new caterer in assessing the situation.

b) How many more quantities of each category are required to serve the 900 students that the school now has.

b) Help the director to determine the new expenditure of the school on feeding the learners per day

## ITEM 2

MUTUMBA wanted to start a farm in KAYIYA town but he had to seek for permission from the town clerk. Since Kayiya is a town, MUTUMBA was supposed to fence his land before the farm can be allowed to start. He was given a document showing the restrictions and the demarcations that he must follow.

These included;

$$y - 2x < 8,$$

$$5y - 2x < 32,$$

$$y > 2$$

$$\text{and } x < 4$$

In these conditions, he was told that x represents the number of cattle and y represents the number of goats he can have on the farm. Every cattle is bought at 1.5million but sold at 1.8millions and every goat is bought at shs250,000 but sold at shs300,000.

He has failed to interpret the conditions and he now needs your help.

## Task

a) Make a suitable illustration that can be used to interpret this situation of restrictions and demarcations.

b) what are the four maximum options for each type of animals.

c) What is the maximum capital he need to buy the animals and the income he is likely to get.

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

**PART I**

**(Answer only one item in this part)**

## ITEM 3

KATULI S.S has performed poorly in their U.A.C.E exams for the recent 10years and the community has got concerned over this worrying performance. They have recruited a new head teacher to save the school since he has ever done the same elsewhere. The school management committee sat and agreed on the following;

* The new head teacher should use a technique of setting a standard general Paper where each student who score below the average mark is demoted to S.5 in order to first improve.

* Four teachers are to be added in the teaching staff if the Mark that will be scored most times is below the average mark and. Only two will be added if it is above the average mark.

| 50 | 70 | 35 | 44 | 42 | 45 | 76 | 33 |
|----|----|----|----|----|----|----|----|
| 39 | 25 | 70 | 65 | 43 | 72 | 22 | 33 |
| 24 | 34 | 26 | 54 | 54 | 45 | 37 | 30 |
| 31 | 33 | 34 | 23 | 15 | 22 | 45 | 12 |
| 16 | 30 | 43 | 24 | 31 | 50 | 18 | 28 |

After giving the test, below are the results.

**Task**

a) Using a suitable mathematical approach, help the new Head teacher to determine the number of students who should be demoted to S.5.

b) Use a suitable illustration to guide the head teacher on the number of teaching staff he needs basing on what the committee agreed.

## ITEM 4

As the government plans to develop each Ugandan before 2030, All people have been encouraged to form groups/SACCO where they can receive the government money from.

The CDO of KIWAYA town has decided to issue this money basing on the number of groups that each citizen is registered in. Below are the criteria of paying them.

   *Each person belonging to more than two groups receive UGX 2 millions

   *Each person belonging to only two groups receive UGX 1million

   *Any person in less than one group but not non will receive ugx50,000

   * All those who are not in any group are to be first sensitized before they register for the next payment on phase 2.

## Hint:

It cost UGX 20,000 to sensitize a willing citizen.

 Members who qualify to be in any group are 180 although others are not in any group

Below are the records in the registrar's office.

| | |
|---|---|
| Members in Farmer's group | 80 |
| Members in both Worker and Trader's groups | 35 |
| Members in Farmer's group only | 35 |
| Members in both Farmer's and Worker's group only | 10 |
| Members in both Trader's and Worker's groups only | Exceeds those in Farmer's and Worker's groups only by 5 members |
| Members in Trader's group | 92 |
| Members in Worker's group | 75 |

## Task

a) Help the CDO to determine the number of members who belong to each

   category of

  payment.

b)  How much is the government going to spend on all these qualified

   members in KIYAWA town

## PART II

### (Answer only I item from this part)

## ITEM 5

Malik got his dream Job just after he had borrowed 1.5 million from a bank that charges 12% compound interest rate for 2 years. He wanted this money to cater for his family members since he has four children;

**Emma 09 years at Hope junior academy**

**Jane 10 years - school drop out**

**Joan 14 years at Charity high school**

**James 20 years at Victory S.S.**

He has been promised to be paid a gross monthly salary of UGX 750,000. He was told that his salary includes the following allowances.

Lunch 5% of his monthly salary, UGX 1000 every day to go to work (to be calculated after 30days), monthly medical allowance of 12 % of his annual salary and the family allowance for only three children who go to school but in the age (06- 17 years). The family allowance is given as follows;

**06 - 09 year, –UGX 10,000**

**10 - 15 years– UGX 15,000**

**16 -17 years –UGX 18,000.**

He is taxed has follows;

| EARNING | TAX RATE |
|---|---|
| <100,000 ........................................................... | 0 |
| -< 200,000........................................................ | 10% |
| -<300,000......................................................... | 15% |
| -<400,000......................................................... | 20% |
| -<500,000......................................................... | 25% |
| -<600,000......................................................... | 35% |
| - <700,00......................................................... | 40% |
| Above 700,000.......................…..…...…..…... | 45% |

Malik is stranded and worried that his salary will all be affected with the loan and he needs your help on the following;

a) His net SALARY per month

b) The money he can pay per month to complete the loan after the two years.

c) After paying all his monthly charges above, how much can he save per month?

## ITEM 6

Fortunate high school taught their learners entrepreneur skills and recently their entrepreneurship club made 1000 boxes of chalk after a long time challenge in the school due to the increase in prices. The school had to find a way of keeping these small boxes of chalk inside other bigger boxes before they are kept in a special designated office shelf for future use
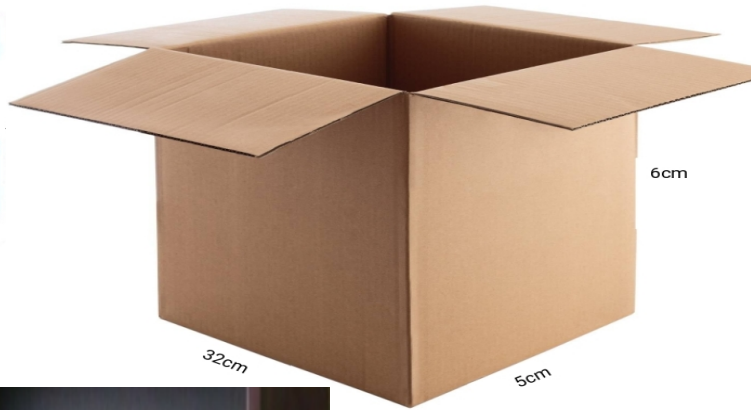
Hint:

The small boxes of chalk measure (5cm x 3cm x 4cm)

The bigger boxes that on the shop measure (32cm x 5cmx 6cm)

The office shelf measures (0.5m x 0.4m x 0.4m)

Each bigger box is sold  ugx1500

The club patron is stranded yet he must make a proper plan for keeping this chalk from the club.

## Task

As a mathematics student, you are tasked to help this patron on the following:

a) The number of bigger boxes he should buy to keep the small boxes.

a) The amount of money that the school is to spend on these bigger boxes.

c) Analyze basing on calculations whether the space in the office shelf will

   be enough to keep all the bigger boxes and comment on your findings.

### END