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MATHEMATICS

Paper 1

July/Aug.2025

$2\frac{1}{4}$  hours

ACEITEKA MOCK EXAMINATIONS 2025

Uganda Certificate of Education

MATHEMATICS

PAPER 1

2 hours: 15 minutes.

INSTRUCTIONS TO CANDIDATES:

*This paper consists of **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.*

*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 calculators and mathematical tables with a list of formulae may be used.*

**Turn over**

## SECTION A

Attempt **both** items from this section.

### Item 1

James hires 12 men to make 50m long cage for eggs. It took them 3 days, he was wondering the number of more men he will need to make a 75m long cage in 2days.

He later bought 360 trays of eggs at shillings 12,000 per tray. He discovered that 10% of the eggs were bad and he could not sell them. He was wondering the cost of the good eggs per dozen he must sell to make a profit of 50%.

James later forgot his mobile phone's password; he only remembers that the password was generated from the product of his age in base six and that of his daughter in base six. He is 45 years old and the daughter is 12 years old.

### Task

Help James to determine,

- (a) The number of more men he will need to do the work under the same conditions.
- (b) The selling price of the eggs per dozen.
- (c) His mobile phone password.

### Item 2

A school headmaster wants to reward boys who attended a sports meeting. The student population in the mixed secondary school is 600. On a particular day one-fifth of the boys and one-quarter of the girls attended an assembly. 468 students were left behind.

The headmaster is not sure whether 1,500,000/= will be sufficient to cover expenses in sixth week of the term, when all 60 teachers and 600 students are present. The cost of feeding in a school day varies partly as the number of student and partly as the number of teachers present. On the first day of term 2, there were 25 teachers available and 300 students, totaling 600,000 spent. On the second day, 30 teachers reported, there were 450 students available and that 850,000/= had been spent.

### Task

Help the headmaster to

- (a) Find how many boys are to be rewarded.
- (b) Form an equation that can be used for other weeks of the term.

- (c) Find out whether the school budget for the sixth week is enough for feeding.

## SECTION B

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

### Part I

*Answer **one** item from this part.*

#### Item 3.

A company hires her employees following an interview. The interview which is conducted in rounds, aptitudes test and oral, an applicant qualifies for oral when he/she attain 75% of the scores in the aptitude test. The company manager does not know the number of successful applicants for oral interview. The aptitude's scores of the applicants were as follows

9.9	6.6	8.5	8.7	7.4	10.8	11.2
8.9	12.4	10.0	6.4	6.5	7.3	12.8
10.4	8.9	8.1	8.8	8.3	9.0	7.6
8.8	11.7	9.2	6.2	10.2	9.8	9.5
7.4	7.0	7.9	8.6	9.3	6.9	7.7
9.1	8.2	7.1	12.3	6.2.		

#### Task

Help the company to:

- Represent the data in a frequency distribution table using an interval of 1.0.
- Determine the scores with which half of the applicants scored.
- Determine the number of applicants who qualified for oral interview.

#### Item4

In a Ludo festival organized during Hero's day celebration, one wins a round if the sum of his scores on the dice is greater than 9 when two dice are rolled once.



The organizer asks 71 participants which animal (goat, sheep, or cow) should be awarded the prize. It was found out that equal numbers of participants liked goats and sheep. 10 participants liked goat and cow, 11 preferred cow and sheep, and 6 selected goat and sheep only. 26 participants liked cows, whereas 5 selected goat only. Participants who preferred cow only doubled those who preferred sheep only. If the probability of those who dislike all of the above is less than 50%, the winner would be given any of these animals.

#### Task

- (a) Help the participants to determine the probability of getting a score than 9 in the festival.
- (b) How many participants prefer all the three species of animal?
- (c) Help the organizer to determine whether the winner shall be awarded one of the animals above.

#### Part II

*Attempt any **one** item from this section*

#### Item 5

Your Aunt owns a room that she plans to convert into a bathroom. The room's area is  $4.7\text{m}^2$ . She intends to use tiles that measure 24 cm by 30 cm. Your Aunt already has 5 boxes of tiles in her home. She realizes the wall tile she intends to use is not enough. So she wants your advice on how much extra she should buy.

A box of 6 wall tiles costs shillings 60,000/=.

She plan to use an employee and whom she pays a gross monthly salary of shillings 450,000. The gross monthly salary includes a non –taxable transport allowance of

shillings 90,000/=,rent allowance of 100,000/= and medical allowance of 45,000/=.However, before she pays him, she has to deduct income tax as a requirement by the tax authority.

The tax bands are shown in the table below.

Monthly taxable income(shillings)	Tax rate(%)
0 – 100,000	0
100,001 – 200,000	5
200,001-300,000	15
300,001 - above	20

Your Aunt is having difficulty in using the tax bands.

**Task;**

- (a)(i) How many more boxes tiles should she buy?  
(ii) How much will she pay for the extra boxes of tiles?
- (b)How much will she pay the employee as net pay?

**Item6.**

Juma a businessman decides to buy a piece of land at 4,000,000/=.He agreed with the seller to pay on hire purchase by paying 18% deposit of the cash price plus 10 equal monthly installments. He needs assistance because he does not know the monthly installment to pay.

Juma has 3.5 million, he contracted a welder to put a metallic container (kiosk) which measures 4m by 200cm by 2.5m on the land. The container should have a door measuring 120cm by 90cm and a window measures 80cm by 60cm made from a different material. A full piece of metallic plate costs 250,000/= and which measures 1.9m by 1.2m. He does not know whether his budget shall be enough for a container(kiosk).

## Support material



### Task:

Help Juma

- (a) To find out the monthly installment he has to pay for the piece of land.
- (b) To determine whether he will be able to afford the container.

***THE END.***