Mathematics
Paper 1
Paper 2023
2 hours

THE MATHEMATICS DEPARTMENT 2023

Uganda Certificate of Lower Secondary Education

S.3 Beginning of term.11. Assessment

Mathematics

2 hours

Fill in the required information below

LEARNER'S NAME:		STREAM:	

LEARNER'S NO.					STUDY GROUP'S NAME:	

THIS PAGE IS FOR EXAMINER'S USE ONLY

Do not write in the boxes on this page. The examiner will use them to keep a record of your marks.

Question		Marks	Comment
SEC A	1 – 5		
	6 – 10		
SEC B	No.		
	No.		
	TOTAL MARKS		

INSTRUCTIONS

- Use the blue or black ink pen only
- Attempt **all** questions in Section **A** and Only **Two** questions in Section **B**.
- Show all the working and explanation on the answer sheets provided.
- Each question in section A carries 4 marks and each question in section B carries 10 marks.
- Pay attention to the number of marks available for each question.

Turn Over

SECTION A(Short response)

Attempt **all** questions in this Section

Qn.1. Two learners illustrated the relation " **is a square of**" as follows. One presented it as $2 \longrightarrow 4$ and another presented it as $4 \longrightarrow 2$. Who of the two learners is correct? Give an explanation of your result. (04marks)

Qn.2. A student carried out an experiment to measure the length of the maize leaves in centimeters and obtained the following results 12, 20, 18, 25, 26, 25, 30, 20. Calculate the:

(i) The average length of the leaves

(ii) The median length.(04marks)

Qn.3. Peter is 12 years older than john. Given that the product of the ages of Peter and John is 45, find the age of each person (04marks)

Qn 4. A student was tasked to simplify the expression $\left(\frac{0.006\times10^3}{2\times10^7}\right)$. Giving the final solution in standard form. Guide her through the steps. (04marks)

Qn.5. In a school, the number of girls is 60 more than twice the number of boys enrolled. Given that the number of the learners at the school is atmost 678, determine the greatest possible number of girls and boys at the school.

Qn.6. If $A = 4 \times 10^4$ and $B = 5 \times 10^{-2}$, find the values of $AB + \frac{A}{B}$ (04marks)

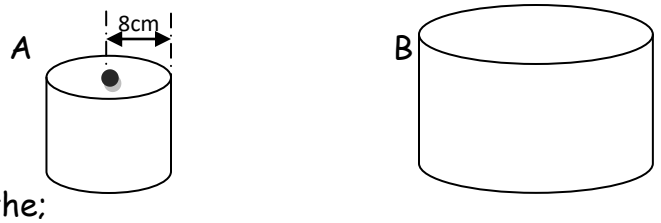
Qn.7. Simplify (5-√3) (2+√3). Give your answer in the form a+b√3. Identify the value of a and b. (04marks)

Qn.8. A flower garden in the form of a square has an area of X^2-6x + 9.

(a) Work out the length of the side.

(b) If the flower garden has an area of 100 square metres, workout the value of x. (04marks)

Qn.9. Figure A and B are similar. If the radius of A= 8 cm and the linear scale factor between A and B is 4.



Find the;

(a). Radius of B
(b). Area scale factor
(c). Volume scale factor (04marks)

Qn.10. Kato would like to fill a fish pond in the form of a cuboid which is 210cm deep. The pond is 12m long and 6.6m wide. Advise Kato on the quantity of water he would require to fill the pond. (04marks)

SECTION B(Extended response)

Attempt Only **Two** questions in this Section

Question.11

The time table for Kansiime on a Saturday is as below, study it and answer the questions that follow

Arrival	Departure	Place
	06:30am	Home
07:06am	03:40pm	School
04:10pm	04:55pm	Market
05:00pm	05:10pm	Friend's place
05:45pm		Home

(a). Describe Kansiime's entire journey in detail by giving how much time they spent in the places shown above and time spent moving. (07 marks)
(b). On Monday, Kansiime walk non stop from Home to School at a constant speed of 18km/h. Determine the distance from home to school. (03 marks)
(C). If on Wednesday Kansiime left School at 03:00pm and run direct to her friend's place at a speed of 18km/h at reached at a friend's place in 20 minutes, where she rested for 30 minutes and then walked home straight 5km away in 30 minutes.
(i). Using a scale of 2cm to represent 1km and 2cm to represent 10 minutes, draw a distance time graph for Wednesday Kansme's jouney.
(ii). At what time did kansiime reach home. (10 marks)

Question.12

On a graph taking values of x and y axes between -7 to 7.
(a). plot and label and join points P(7, 5) Q(7, 2) and R(5,2). (01 marks)
(b). Draw a line $y = -1$ and reflect the figure about to obtain $P^1Q^1R^1$.(04 marks)
(c). Then Translate the image $P^1Q^1R^1$ through a vector $M = \begin{pmatrix} -4 \\ 5 \end{pmatrix}$ and state the coordinates for the new image $P^{11}Q^{11}R^{11}$. (05 marks)

Question.13

Kireka ,Naalya and Bulindo are three villages. The distance of Kireka from Bulindo is 15Km.The distance of Naalya from Bulindo is 15km, and Kireka is due East of Naalya. The bearing of kireka from Bulindo is 140^0.

(a) Draw an accurate diagram showing the three villages.

(b) Find the bearing of Bulindo from Naalya (10 marks)

Question.14

A school had certain regulations about the amount of pocket money and the numbers of casual wear were allowed to have in their dormitories. During the inspection of the dormitory which contained 16 students, it was found that 8 students had too much pocket money and 9 students had too many casual wear

(a) What was the number of students breaking both rules?

(b) How many students were breaking regulation of pocket money only?

(c) How many students did not break any rule? (10 marks)

END