Mathematics
Paper 1
Oct/Nov.2022
2 hours

THE MATHEMATICS DEPARTMENT 2022

Uganda Certificate of Lower Secondary Education

S.1 End of Year Assessment

Mathematics

Paper 1

2 hours

CANDIDATE NAME: _____

CANDIDATE NUMBER: _____

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

Question	1	2	3	4	5						Total
Marks scored											

INSTRUCTIONS

1. Answer all the questions in this paper.
2. Graph paper may be provided.
3. Pay attention to the number of marks available for each question.
4. Show all the working and explanation on the answer sheets provided.

Turn Over

1.(a) The diagram shows five number cards.

Put two cards side by side to show

(i). A two-digit number that is a multiple of 7

(ii). A two-digit square number

(iii). A two-digit cube number

(iv). A two-digit prime number. *(05 marks)*

(b) Insert one pair of brackets into this statement to make it correct. *(01 marks)*

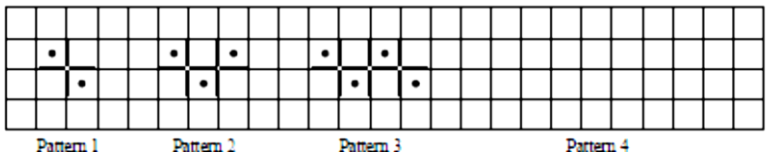
$$7 \times 5 - 2 + 3 = 42$$

(c) Mariam and Peter take 30 and 40 minutes respectively to run round a circular track. If they started their race at 8:00 am from the same starting point;

(i). what is the earliest time they will be at the starting point together?

(ii). after how many hours will they be at the starting point together? *(04 marks)*

2. A sequence of patterns is made using lines and dots.
The first three patterns in the sequence are shown below.



(a) Draw Pattern 4 on the grid. *(02 marks)*

(b) Copy and complete the table

Pattern	1st	2nd	3rd	4th		10th
Number of dots	2	3				
Number of lines	4	7				

(04 marks)

(c) Find an expression, in terms of *n*, for

(i) The number of dots in Pattern *n*.

(ii) The number of lines in Pattern *n*. *(04 marks)*

(d) A pattern has 76 lines. Work out how many **dots** are in this pattern. *(02 marks)*

3. (a). (i). Work out the value of angles, *x*, *y* and *w* figures 1and 2.

fig.1

NOT TO SCALE

NOT TO SCALE

fig.2

(ii). Give reason for your answers. *(09 marks)*

(b). (i). A hexagon has five angles that each measure 115^0. Calculate the size of the sixth angle. *(04 marks)*

(ii). Kayesu knows that one angle of an isosceles triangle is 48^0. He says that one of the other angles must be 66^0. Explain why Kayesu is wrong. *(03 marks)*

(c). Using a ruler and pair of compasses only, construct a triangle with sides 5cm, 8cm and 10cm. *(03 marks)*

(d). a WOMENA NGO provides transport refund to every member who attend a seminar as below.
a Trainer of trainers (TOT) is given 40% of the money,
a Trainer is given 30% of the money,
a student lead and other participants share the remaining percentage equally.

As a senior one learner, using the knowledge of angles, drawing figures and percentages, draw a **pie chart** that would help the organization distribute the Transport refund. (Use radius of 4cm) *(03 marks)*

4. (a) The table shows part of a bus timetable.

Gateway	10:15am	10:35am	10:55am	11:15am
Link	10:32am	10:52am	11:12am	11:32am
Baby coach	10:58am	11:18am	11:38am	11:58am
Kalita	11:10am	11:30am	11:50am	12:10pm

(i) Makumbi leaves home at 10:50am, he takes 14 minutes to walk to the bus stop at Link. At what time does he reach the bus stop?
(ii) He gets on the next bus at Link and travels to Kalita Park. At what time does this bus arrive at Kalita Park?
(iii) Work out how many minutes the bus takes to get from Link to Kalita Park. *(04 marks)*

(b) Ivan walks 1.5 km from his home to Kalita Park. He takes 20 minutes. Work out Ivan's average speed in kilometres per hour. *(02 marks)*

5. The scale drawing in figure.3 shows a map of Old taxi Park. There are two straight paths and one circular path.
The scale is 1 cm represents 200 m.

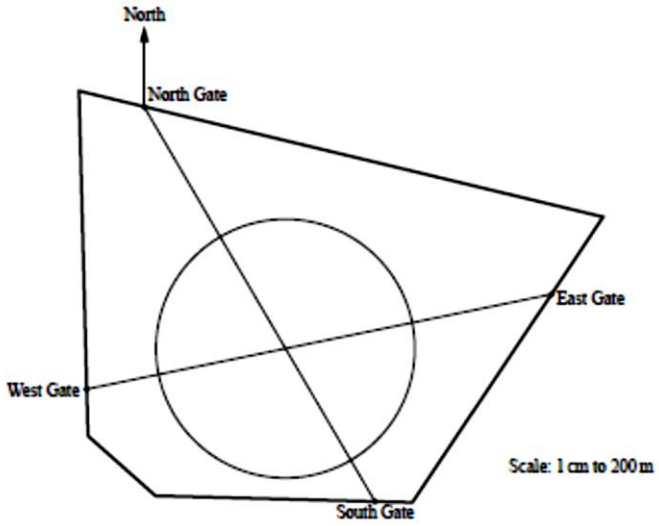


fig.3

(a) Joshua walks along the straight path from East Gate to West Gate. Work out the distance he walks. Give your answer in kilometres. *(02 marks)*

(b) Measure the bearing of South Gate from North Gate. *(01 marks)*

(c) The entrance, Q, to a market area is 500 metres from North Gate on a bearing of 195°. Mark the position of Q on the map. *(03 marks)*

(d) Ivan runs once around the circular path. Calculate the distance Ivan runs. *(04 marks)*

(e) Omal walks straight from the North Gate to South Gate, and then takes a straight path to the West Gate.

(i). Draw an accurate path walked Omal on a graph paper. *(08 marks)*

(ii). Determine the shortest distance from the West Gate to the North Gate. *(02 marks)*

END