Uganda Certificate of Lower Secondary Education

End of Term II Examinations

Mathematics

2 Hours

INSTRUCTIONS:

- Answer ***all*** questions in both sections
- Each question in section A carries 4 marks and each question in section B carries 15 marks.

Section A (40 marks)

1.A market vendor has 50 tomatoes for sale.

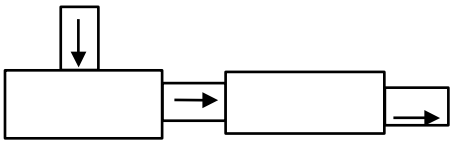
a) How many heaps of fours can she form from these tomatoes?
b) If she decides to sell each heap obtained at $UGX\,500$, how much money will she get?

2.A shopkeeper sells a television set at $UGX\,460,000$. A customer is offered a $4\,\%$ discount for paying in cash. How much does the customer pay for the television set in cash?

3. A photograph measuring $10\,cm$ by $8\,cm$ is enlarged so that its width is $20\,cm$. Determine the:

a) length of the new photograph
b) Area scale factor of the enlargrment.

4.The figure below shows a double number machine



By putting in the first four even numbers in the machine, find the first four terms of the sequence.

5.In a certain school, $40\,\%$ of the learners eat lunch at school. If 84 learners do not eat lunch at school, how many learners are there in the school?

6.Milk bottle tops are made by cutting as many circles as possible of diameter $6\,cm$ out of a strip of aluminium $360\,cm$ long and $6\,cm$ wide.

a) What area of the aluminium is wasted?
b) How many complete bottle tops can be cut out?

7.Determine the inequality which is represented by the unshaded region on the graph below:

8.Babirye who is $1.5\,m$ tall stands $25\,m$ from the foot of a flagpole. Her angle of elevation to the top of the flag is 30^0. Determine the height of the flagpole.

9. The length and width of a rectangular piece of land are $(\sqrt{2}+4)\,m$ and $(\sqrt{2}-1)\,m$ respectively. Find the area of the piece of land. (leave your answer in surd form)

10.An examination that took $2\frac{1}{2}$ hours ended at $11:15\,am$. What time did it start?

SECTION B (60 marks)

Answer ***all*** questions in this section

11. At $7:00\,am$ a bus P leaves town A travelling to town B, $75\,km$ away, at an average speed of $60\,km/hr$. After a $30\,minutes$ stopover at B, due to the poor state of the road, the bus travels another $35\,km$ to town C at $35\,km/hr$. At $8:00\,am$, an express bus Q leaves town C for town A, and travels at a speed of $55\,km/hr$.

a) Draw a distance-time graph to show both journeys. (Use a scale of $2\,cm$ to represent $30\,minutes$ on the horizontal axis, and $2\,cm$ to represent $10\,km$ on the vertical axis).
b) From your graph, find where and when the two buses met.
c) What time did bus P and bus Q reach their respective destinations?
d) Calculate the average speed of bus P for the whole journey.

12.Using a ruler, pencil and a pair of compasses;

a) Construct a triangle ABC such that $A\acute{B}=5.8\,cm, B\acute{C}=6.2\,cm$ and angle $ABC=120^0$. Drop a perpendicular from C to meet AB produced at D. Measure the length of $C\acute{D}$.
b) Bisect $A\acute{B}$ and $B\acute{C}$ and let the bisectors meet at point O. Using O as the centre, draw a circle passing through the points A, B and C. Hence state the radius of the circle.
c) Determine the area triangle ABC.

13.The frequency table below shows the ages of 34 people in Naluwoli village.

Age (years)	Number of people
$1-5$	2
$6-10$	4
$11-15$	5
$16-20$	10
$21-25$	8
$26-30$	3
$31-35$	2

a) Calculate the;
    i) Mean age
    ii) Modal age
b) Draw a cumulative frequency curve (Ogive) for the above data. Use the Ogive to estimate the;
    i) Median age of the village
    ii) Number of people between the ages of 18 and 24 years.

14.**ABCD** is a rectangle with A as the point $(-3,1)$**.**

a) If AB is parallel to the line $3y-x=4$, find the equation of the line AB.
b) Find the equation of line AD.
c) If C has coordinates $(2,6)$**,** find the equation of the diagonal AC. Comment on the gradient of the diagonal BD.