THE PRESIDENT'S OFFICE

MINISTRY OF EDUCATION, REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

COMPETENCE BASED SECONDARY EXAMINATION SERIES

MATHEMATICS ANNUAL EXAMINATION

FORM ONE – NOVEMBER 2025

Time: 2:30 Hours

INSTRUCTIONS

1. This paper consists of Section A and Section B with a total of fourteen (14) questions.
2. Answer all questions in both sections.
3. Each question in Section A carries six (6) marks while each question in Section B carries ten (10) marks.
4. All necessary working and answers for each question must be shown clearly.
5. You may use a non-programmable scientific calculator and mathematical tables where necessary.
6. You are advised to spend not more than two (2) hours on Section A.
7. All unauthorized materials and communication devices are not allowed in the examination room.
8. Write your Examination Number on every page of your answer booklet.

SECTION A (60 Marks)

Answer all questions in this section.

1. (a) Write down the place value and total value of digit 7 in the number 47,682.
   (b) Round 8,463 to the nearest hundred and the nearest thousand.
   (c) Express 0.625 as a fraction in its simplest form.
2. (a) Simplify: $2/5 + 3/10 - 1/4$
   (b) Write the ratio 2 hours : 45 minutes in its simplest form.
   (c) If 5 books cost 7,500 shillings, how much will 12 books cost at the same rate?

3. (a) A map is drawn to the scale of 1 : 100,000. Find the actual distance represented by 8.5 cm on the map.

   (b) The ratio of boys to girls in a class is 3 : 4. If there are 28 pupils, how many are boys?

   (c) Convert 2.5 kilometres into metres and centimetres.

4. (a) Find the perimeter and area of a rectangle whose length is 8 cm and width is 5 cm.

   (b) A triangle has base 12 cm and height 9 cm. Find its area.

   (c) Convert 320 degrees into radians.

5. (a) Use a diagram to show the reflection of a point A(3, 2) in the x-axis. Write down the coordinates of the image.

   (b) Find the coordinates of the midpoint of a line joining points P(–2, 4) and Q(6, –2).

   (c) Find the gradient of the line joining the same two points.

6. (a) Simplify completely: $3x + 5 - 2(x - 4)$

   (b) Solve for x: $7x - 9 = 19$

   (c) Evaluate when $x = 2$ and $y = -3$: $2x^2y - 3xy^2$

7. (a) Given that $A = [2\ 1; 3\ 4]$ and $B = [1\ 2; 0\ 5]$, find $A + B$ and $2A - B$.

   (b) If $C = [2\ 0; 3\ 1]$, find the transpose of C, written as C^T.

8. (a) The temperature at midnight was –6°C and by midday it was 9°C. Find the change in temperature.

   (b) Simplify: $(-3)^2 + 5(-4)$

   (c) Write the following numbers in ascending order: –7, 0, –2, 4, –5.

9. (a) Given that $y = 2x + 3$, find y when $x = 5$.

   (b) Draw the graph of $y = x + 2$ for values of x from –2 to 2.

   (c) State the gradient and y-intercept of the graph.

10. (a) The universal set $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{2, 4, 6, 8\}$ and $B = \{3, 4, 5, 6, 7\}$. Find:

    i. $A \cup B$

    ii. $A \cap B$

    iii. A'

    (b) Draw a Venn diagram to represent the above information.

SECTION B (40 Marks)

Answer all questions in this section.

11. (a) The following table shows the distribution of marks scored by 40 students in Mathematics.

Marks (%)	0–9	10–19	20–29	30–39	40–49	50–59	60–69
No. of Students	2	5	6	10	8	6	3

i. Find the **class interval**

ii. Determine the **modal class**

iii. Calculate the **mean mark**

(b) Draw a histogram representing the data above.

12. (a) A piece of wire 88 cm long is bent to form a circle. Find the radius and the area of the circle. Take $\pi = 3.14$.

    (b) A rectangular tank has a base area of 1.5 m² and height 2 m. Find the volume of the tank in litres.

13. (a) A car travels 120 km in 2 hours. Find:

    i. Its speed in km/h.

    ii. The time it will take to cover 300 km at the same speed.

    (b) A man bought 15 mangoes for 6,000 shillings. Find:

    i. The cost of one mango.

    ii. How many mangoes he can buy for 12,000 shillings.

14. (a) Solve the simultaneous equations using any method:

    $2x + y = 7$

    $x - y = 1$

    (b) A tailor uses 2 metres of cloth to make one shirt and 3 metres to make one pair of trousers. If she has 24 metres of cloth and must make at least two shirts, find all possible combinations of shirts and trousers she can make. Represent your answer on a graph and identify the feasible region.

END OF EXAMINATION