SIRONGA GIRLS' HIGH SCHOOL
FORM 3 CAT 1/15-2024

FILL IN YOUR PERSONAL DETAILS HERE

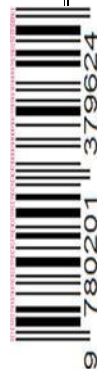Student Name: _____ Stream: _____

Admission Number: _____ Target: _____
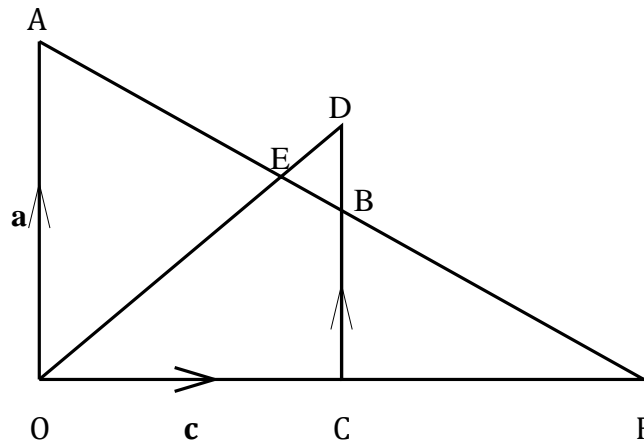
Instructions to Candidates:

a) Write your name, admission number and stream in the spaces provided above.

b) Answer **ALL** the questions in **Section I**

c) **Show all the steps in your calculations, giving your answers at each stage in the spaces provided below each question.**

QUESTIONS ARE AS BELOW;

1. The cash price of a T.V set is Ksh. 26,000. Linda bought the set on hire purchase terms by paying a deposit of Ksh. 6,000 and the balance by 24 equal monthly installments of Khs. 1,045.30. Find the compound rate of interest per year.   {3 marks}

2. In the figure below, **OA** = **a** and **OC** = **c**. $CB = \frac{2}{3}$ **OA** and B divides CD in the ration 3 : 1

(a) Express the following vectors in terms of **a** and **c** only:

(i) **AB**;   {1 mark}

(ii) **OD**   {2 marks}

b) Given that **OE** =*h***OD** and **AE** =*k***AB** where *h* and *k* are scalars express **OE** in two different ways hence find the scalars *h* and *k*.   {5 marks}

c) If OC produced meets AB produced at F and that *AF* = 3*AB*, find the modulus of *OF*. {3 marks}

3. The table below shows the Kenyan tax rate in a certain year.

Income (Ksh per annum)	Tax rates (%)
On the first Ksh 116,160	10%
On the next Ksh 109,440	15%
On the next Ksh 109,440	20%
On the next Ksh 109,440	25%
All the income over 444,480	30%

A company employee is Housed by the company, and as a result, he pays Kes 900 per month as nominal rent. He is entitled to a Basic salary of Ksh. 30, 000 per month, Commuter allowance of Kes 5,000, and Risk allowance of Kes 3,000 per month. He contributes 10% of his Basic salary per month to a pension scheme and this contribution is tax free. He. Besides he claims additional relief of Kes 2,000 from life assurance cover which is equivalent to 2% of the premiums paid per month.

a) Calculate his taxable income per annum.   {2 marks}

b) Calculate his payable tax per month if he gets a personal relief of Ksh. 1056   {4 marks}

c) He pays NHIF and NSSF Ksh. 3000 and Ksh. 1000 per month respectively. Given further that Kes 11, 248 is auto deducted towards other monthly expenses. Determine his net monthly pay.   {3 marks}

4. Determine the amount of interest when Ksh. 320,000 is invested in a bank that pays compound interest quarterly at the rate of 12% p.a for 3 years. {2 marks}

5. A man invested Ksh 240,000 in bank A at a simple interest rate of 12% p.a for 3 years and Ksh 200,000 in bank B at a simple interest rate of 14% p.a for the same duration. By what percentage is the return of Bank B, greater than that of Bank A? {3 marks}

6. In the figure below, the chords CD and AB intersect externally at T. DT = 4 cm, BT = 3 cm and CD = 5 cm, calculate the length AB. {2 marks}