

LEVEL 5

Demonstrate Numeracy Skills

March/April 2025



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

WRITTEN ASSESSMENT

Time: 3 HOURS

INSTRUCTIONS TO CANDIDATE

1. This paper consists of **TWO** sections: **A** and **B**.
2. Answer **ALL** questions in section A and **ANY THREE** (3) questions in section B.
3. Marks for each question are indicated in the brackets.
4. Candidates are provided with a separate answer booklet
5. Do not write on the question paper.

This paper consists of SIX (6) printed pages
Candidates should check the question paper to ascertain that all
pages are printed as indicated and that no questions are missing.

SECTION A (40 MARKS)*Answer ALL the questions in this section.*

1. A student scored the following marks in eight subjects: 60,70,60,85,70,65,55,80
Using the data above calculate;
 - a) The median mark (2 Marks)
 - b) The mean mark (2 Marks)
2. The lens formula is given as $\frac{1}{a} + \frac{1}{b} = \frac{1}{c}$. make b the subject then evaluates the value of b when a=8 and c=6. (4 Marks)
3. Using a ruler and a pair of compasses only, construct an equilateral triangle XYZ whereby XY=8 cm and inscribe a circle. Measure the radius of the circle. (4 Marks)
4. A line passes through the points A (0,1) and B (2, 4). Find the equation of a line perpendicular to line AB and passing through point C (4,0.5). (4 Marks)
5. Three alarms ring at intervals of 15 minutes, 30 minutes and 45 minutes. Quinton set all the three alarms at 11:45 a.m., at what time will all the alarms ring together in the 12 hr clock system? (4 marks)
6. Calculate the surface area of an open cylinder if it has a diameter of 3.5 cm and a height of 45cm. give your answer in m². (4 Marks)
7. A traveler left Voi for Kitale a distance of 520 kilometres at 11:00p.m by bus. After travelling at a speed of 60km/hr. for three hours, they rested for 30 minutes at Mtito Andei and resumed their journey. If they arrived Kitale at 9:38 a.m., calculate:
 - i. Average speed for the whole journey. (2 Marks)
 - ii. Average speed for the second part of the journey? (2 Marks)

8. Mary sold a car to a to Winnie at a 5% profit. Later on Winnie sold the car to Kim at a ksh. 430000 making a 14% loss. What was the original buying price? (4 Marks)
9. John is twice as old as his son. His daughter is five years lesser than her brother while his wife is six years younger than him. If Johns daughter is 25 years, formulate the algebraic expressions giving their ages. (4 Marks)
10. Simplify the expression; (4 Marks)

$$\frac{x^2 - 4y^2}{x^2 + 3xy + 2y^2}$$

SECTION B

Answer any THREE questions in this section

11.

- a. A company purchased three vehicles. In year 1, he purchased a van at ksh. 2,000,000, a year later vehicle 2 costing Ksh. 1,500,000 and after another year the last vehicle at a cost of ksh. 1,800,000 and depreciates at 10% per annum.
- i. Compute the value of the vehicles after the first four years. (8 Marks)
 - ii. If the vehicles have a useful life of five years, calculate their depreciation on straight line basis. (2 Marks)
- b. The ratio of goats to sheep is 2:5 while that of sheep to cows is 3:4. If there are 300 sheep, calculate;
- i. How many animals in total are present in the firm? (4 Marks)
 - ii. If 50 sheep were sold, calculate the new ratio of goats to sheep to cows. (2 Marks)
- c. A salesman is paid a basic salary of Ksh. 10,000 and a commission of 4% on any sales above Ksh. 60,000 up to Ksh. 200,000. Any sales made which are above Ksh. 200,000 he receives a different rate of commission. During the month of January 2025, sales made amounted to Ksh. 350,000 and he received KShs. 27,600. Calculate;
- i. The rate of commission for sales above Ksh. 200,000. (4 Marks)

12.

- a. A solid cone has a volume of 314m^3 and a height of 12 m. Calculate its surface area. (8 Marks)
- b. The monthly sales of B Ltd were as follows;

Month	January	February	March	April	May
Sales (Ksh. '000)	13,500	3,000	4,500	9,000	6,000

- i. Using the data provided above, draw a pie chart. (5 Marks)
- ii. By what percentage were the sales of January and March more than the sales of May? (2 Marks)
- c. Three taps A, B and C can fill a tank in 30 minutes and 45 minutes respectively while tap C empties the tank in 90 minutes. If all the taps were simultaneously opened at the same time for 10 minutes and then tap C was closed, how long did it take to fill the tank? (5 Marks)

13.

- a. Using the quadratic expression $y = X^2 - 2x + 1$ and a range of $-2 \leq X \leq 3$, prepare a table and draw a graph. (10 Marks)
- b. Kelvin, Christine and Said take 15, 20 and 30 days respectively to complete a task when working independently. They all started working together but after two days, Kelvin stopped working. Determine how long it will take to complete the task. (5 marks)
- c. Ariel wants to buy a washing machine worth Ksh. 105,000. If he pays in cash, he will receive a 7% discount. Alternatively, there is a hire purchase option where he will pay a deposit of ksh. 35,000 and 6 equal installments of Ksh. 15,000. Calculate;
- i. The amount paid in cash. (2 Marks)
- ii. How much more will he pay in hire purchase than in cash? (3 Marks)

14. The data below shows the marks scored by students in a class of 130 students. Using the information provided;

Class	Number of candidates
0-9	30
10-19	15
20-29	45
30-39	35
40-49	5

- i. State the modal class. (1 Mark)
- ii. Calculate the mean mark (5 Marks)
- iii. Compute the standard deviation. (7 Marks)
- iv. Find the median mark (4 Marks)
- v. The upper quartile. (3 Marks)