

CHRISTIAN SOCIAL SERVICES COMMISSION (CSSC)
NORTHERN ZONE JOINT EXAMINATIONS SYNDICATE (NZ-JES)



FORM TWO PRE-NATIONAL ASSESSMENT AUG 2025
MATHEMATICS-AMALI
MARKING SCHEME

Question 01 (11 Marks)

1. a) (i) Fifty-six thousand, seven hundred and eighty-nine (02 Marks)

(ii) $5 \times 10000 + 6 \times 1000 + 7 \times 100 + 8 \times 10 + 9 \times 1$ (02 Marks)

(iii) 5.6789×10^4 (02 Marks)

b) Formula: Time = Distance / Speed (01 Marks)

Substitution; Time = $180 / 60$ (02 Marks)

Answer: 3 hours (02 Marks)

Question 02 (08 Marks)

02. a) Given number 34.567

(i) 34.6 (to tenth) (02 Marks)

(ii) 30 (to tens) (02 Marks)

02. b) Subtraction setup: $(5x+7y)-(2x+y)$ (02 Marks)

Grouping like terms: $(5x-2x)+(7y-y)$ (01 Marks)

$3x+6y$ animals (01 Marks)

Question 03 (10 Marks)

03. a) Set up ratio: 4 boys:5 girls (01 Mark)

Set up proportion: $4/5=20/x$ (02 Marks)

Solving for x: $x = (20 \times 5)/4$ (01 Mark)

Answer: 25 girls (01 Mark)

3. b) Finding The cost per subject: $3,000,000 / 3 = 1,000,000$ (02 Marks)

Multiplying by the new number of subjects: $1,000,000 \times 5$ (02 Marks)

Answer: 5,000,000 (01 Mark)

Question 04 (11 Marks)

04. a) Let the initial number of mangoes be "m" (01 Mark)

Set up equation: $m-5=10$ (02 Marks)

Solving m: $m=10+5$ (01 Mark)

Answer: 15 mangoes (01 Mark)

04. b) Gradient formulas: $m = (y_2-y_1)/(x_2-x_1)$ (02 Marks)

Substitution of points: $m = (3-6)/(-6-(-3))$ (02 Marks)

Simplification: $m=-3/(-3)$ (01 Mark)

Answer; Gradient of AB = 1 (01 Mark)

Question 05 (10 Marks)

05. a) Given $4^2 \times 2^2$; Required; It's value.

Calculating $4^2=4\times4=16$ (02 Marks)

Calculating $2^3=2\times2\times2=8$ (02 Marks)

Multiplying the results: $16\times8=128$ (01 Mark)

05. b) Calculating the square root of 64: $64 = 8$ (02 Marks)

Calculating the cube root of 27: $27 = 3$ (02 Marks)

Finding the sum: $8+3=11$ (01 Mark)

Question 06 (10 Marks)

06. a) Given $\log_2 8 = x$; Required; Value of x.

Understanding the definition of logarithm: $\log_b a = c$

In exponential form, it become $a = b^c$ (01 Mark)

For $\log_2 8 = x$ will become $8 = 2^x$ (01 Mark)

By breaking 8 to get its prime factors, $8=2^3 = 2^x$

By comparison; $x = 3$ (02 Marks)

06. b) Given sets $A=\{1,2,3,4,5\}$, Set $B=\{4,5,6,7\}$

Required: Representing on The Venn diagram.

- Identifying the intersection: $A\cap B=\{4,5\}$ (01 Mark)
- Identifying elements only in A: $\{1,2,3\}$ (01 Mark)
- Identifying elements only in B: $\{6,7\}$ (01 Mark)
- Drawing a correct Venn diagram: (03 Mark)
- [Venn Diagram with circles A and B, with 1, 2, 3 in A and 6, 7 in B.
- The intersection has 4,5]

Question 07 (10 Marks)

07. a) Given scales 1cm representing 1000cm

Required; Actual distance when the map distance = 5cm

$$1\text{cm} = 1000\text{cm}$$

$$5\text{cm} = x$$

$$X = (5\text{cm} \times 1000\text{cm}) / 1\text{cm} = 5000\text{cm} \quad (02 \text{ Marks})$$

Converting 5000cm into metres

$$1\text{m} = 100\text{cm}$$

$$5000 / 100 = 50\text{m} \quad (02 \text{ Marks})$$

$\therefore$ The actual distance = 50m (01 Mark)

7. b) Given; Angle of elevation (Θ) = 30° Distance from bottom of tree to Angelica = 10m. Required; Height of The tree (h).

- Drawing a triangle having the directives: (02 Marks)
- [Right-angled triangle with angle of elevation 30 degrees, base 10m, and height h]
- Identifying the correct trigonometric ratio: $\tan \Theta = \text{opp/adj} = h/10$
(01 Mark)
- Solving the height: $h = 10 \tan 30$ (01 Mark)
- Calculating and rounding off the answers: Height (h) = 5.77m (01 Mark)

Question 08 (10 Marks)

08. a) Given; Principal (P) = 10,000/=, Rate (R) = 10%, Period (T) = 3yrs

Required; The Interest earned (I)

- Simple Interest formula: $I = (PRT)/100$ (01 Mark)
- Substituting values: $I = (10000 \times 10 \times 3)/100$ (01 Mark)
- Calculation: $I = 1000 \times 3$ (01 Mark)
- Answer: 3,000 (01 Mark)

8. b) - Recognizing that 34,100 represents 88%

The cost price (100%–12%). (02 Marks)

- Setting up of equation:
- $88\% = 34,100$
- $100\% = x$ (01 Mark)
- Solving for cost price: $(100\% \times 34,100) / 88\%$ (02 Mark)
- Answer: Cost price = 38,750 Tshs (01 Mark)

Question 09 (09 Marks)

09. a) From the given expression $4x+8$

- Identifying the common factor, which is 4, (02 Marks)
- Factor out The common factor: $4(x+2)$ (02 Marks)

9. b) - Setting up two equations:

$$x + y = 5 \text{ and}$$

$$x - y = 1 \quad (02 \text{ Marks})$$

- Solving the system by either elimination, substitution or graphical method. (02 Marks)
- Answers: The two numbers are 3 and 2 (01 Mark)

Question 10 (11 Marks)

10. a) - Substituting x into the expression: $7(3 \times 2)^2$ (01 Mark)
- Solving The inner value; $7(6)^2$ (01 Mark)
 - Calculating The exponent; $7(36)$ (01 Mark)
 - $7 \times 36 = 252$ (01 Mark)

10.b) Given number 1999.5619; Required, nearest hundredth and nearest 2 decimal places.

- (i) 1999.56 (to hundredth) (01 Mark)
- (ii) 1999.56 (to two d.p) (01 Mark)

c) Given numbers; 24 and 36 ; Required; LCM - GCF

- 24,36
- $2|12,18$
- $2|6,9$
- $3|3,9$

- 3|1,3
- 1,1 (02 Marks)
- $GCF=2 \times 2 \times 3=12$
- $LCM=2 \times 2 \times 2 \times 3 \times 3=72$ (01 Mark)
- Difference = $LCM - GCF = 72-12$ (01 Mark)
- The Answer: = 60 (01 Mark)