

WAKISSHA JOINT EXAMINATIONS

SCORE GUIDE

End of year Assessment

Senior Three

November 2023

MATHS



COMPETENCY BASED SCORING GRID

Item I:

Basis	Competency	Evidence/Skill	Score	Distribution of Score
a) Ability to work with integers b) Formation of algebraic equations c) Ability to apply algebra to solve simultaneous equations	<ul style="list-style-type: none"> Learner carries out calculations with positive and negative integers. Find the prime factorization of numbers. 	<p>a) Let "a" be the age of boys $a \times a = 144 \quad a^2 = 12^2, \therefore a = 12.$</p> <p>b) Identifying all factors of 720. $\{1, 2, 3, 4, 5, 6, 8, 9, 18, 20, 36, 720\}$</p> <p>The possible numbers include $(1, 720), (2, 360), (3, 240), (4, 180), (5, 144), (6, 120), (8, 90), (9, 80).$</p> <p>c) Let x, y be the prices of each sweet and chapat respectively. Okello purchased $5x + 2y = 2500$. Okot purchased $4x + y = 1400$.</p> <p>From Okot's, $y = 1400 - 4x$ $5x + 2(1400 - 4x) = 2500$ $5x - 8x = 2500 - 2800$ $\rightarrow x = 100$</p> <p>$y = 1400 - 4(100)$ $y = 1000$</p> <p>\therefore each sweet costs Ugx 100 and each chapat costs Ugx 1000.</p>	8 Marks	<p>B₁, Stating/implied $a \times a = 144$ M₁, for $a^2 = 12^2$ A₁, for age = 12 years</p> <p>B₄, if all factors are identified. B₃, if $\frac{1}{4}$ of the factors are identified. B₂, if $\frac{1}{2}$ identified. B₁, if $\frac{1}{4}$ identified.</p> <p>B₁, for each pair of factors stated $\times 8 = 8$ marks.</p> <p>B₂, for forming each equation $\times 2 = 4$ marks.</p> <p>B₁, for making y the subject. M₁, Simplification. A₁, for $x = 100$. B₁, for correct substitution. M₁, Simplification. A₁, for $y = 1000$.</p>
Total Marks		25		

Item 2:

Basis	Competency	Evidence/Skill	Score	Distribution of Score
<ul style="list-style-type: none"> Decision making in business. Learner uses both options: Simple interest and compound interest. 	<ul style="list-style-type: none"> Learner uses decimal place values to develop understanding of numbers. Learners carry out calculations with positive and negative integers. Learner understands and applies Business Mathematics when solving problems. 	<p>a) Given Salary 600,000, Savings 100,000. Balance is 500,000. Amount needed = $10,000 + 100,000 + 100,000 = \text{Ugx } 210,000$.</p> <p>Rent = $\frac{1}{4} \times 600,000 = \text{Ugx } 150,000$</p> <p>Glossaries</p> <p>Transport = $\frac{3}{2} \times 100,000 = \text{Ugx } 150,000$</p> <p>$\text{Ugx } 400,000$</p> <p>Un expected = $500,000 - 400,000 = \text{Ugx } 100,000$</p> <p>Option 1, Amount = Principal + Interest</p> $210,000 = 100,000n + \frac{5}{100} \times 100,000n$ $210,000 = 105,000n$ $n = 2 \text{ years.}$ <p>Option 2, Interest in 5years = $\frac{5}{100} \times 12,000,000 \times 5$</p> $= \text{Ugx } 300,000$ <p>Amount in 5years = $(5 \times 100,000 + 300,000)$</p> $= \text{Ugx } 800,000.$ <p>5 years = 800,000</p> $\text{y years} = 210,000, \rightarrow y = \frac{(210,000 \times 5)}{800,000}$ $y = 1.3125 \text{ years}$ <p>b) Conclusion: Option 1 is better because interest in agreed time.</p> <p>c) Unexpected circumstances = Ugx 100,000</p>	<p>1 mk 2 mks</p> <p>5 mks</p> <p>2 mks</p> <p>5 mks</p> <p>3 mks 2 mks 3 mks</p> <p>1 mk 1 mk</p>	<p>B₁ for balance seen or implied M₁ for expression A₁ for 210,000</p> <p>M₁ for computing rent, A₁ for 150,000</p> <p>M₁ for calculating transport.</p> <p>M₁ for addition, A₁ for 400,000 M₁ for subtraction, A₁ for 100,000.</p> <p>M₁ for expression, M₁ for equating, M₂ for simplification, A₁ for n = 2.</p> <p>M₁ for stating, M₁ for simplification and A₁ for 300,000. M₁ for addition and A₁ for 800,000.</p> <p>M₁ for expression, M₁ for simplification, A₁ for value y=1.3125</p> <p>B₁ for conclusion.</p> <p>B₁ for unexpected.</p>
	Total	25 mks		

Item 3:

Okello and
product
of
boreas
and

MATHEMATICS
YEAR
NUTES

Basis	Competency	Evidence/skill	Score	Distribution of Score
<ul style="list-style-type: none"> Ability to represent relative positions on a sketch diagram. Ability to manipulate algebra 	<ul style="list-style-type: none"> Learner uses compass points, bearings and scale drawings. Learner understands and uses the three basic trigonometric functions. 		4 mks 4 mks	B ₁ for each relative route correctly drawn × 4 = 4mks B ₁ for each bearing drawn correctly 135°, 180° and Western direction and B1 for complete sketch.
<p>Distance Kalagi to School $55\cos 45^\circ = 38.89 \text{ km}$ (2dp)</p> <p>Distance on tarmac is $(55 + 40 + 38.89) = 133.89$</p> <p>Total distance 133.89</p> <p>Av. Speed = $\frac{\text{Total distance}}{\text{Total time}} = \frac{133.89}{2} = 67 \text{ km/hr}$</p> <p>Distance on marram road = $38.89 + 40 = 78.89 \text{ km}$</p> <p>Time taken = $\frac{78.89}{30} = 2.63 \text{ hrs}$</p> <p>Preference: Use tarmac road</p> <p>Reason: Movement on tarmac takes less time and low consumption of fuel.</p>	<p>3 mks</p> <p>2 mks</p> <p>3 mks</p> <p>5 mks</p> <p>1 mk</p> <p>2 mks</p> <p>-</p> <p>B₁ for identifying, M1 for simplification and A1 for the answer.</p> <p>M₁ for addition, A1 for 133.89 B₁ for expression, M1 for simplification and A1 for 2.63hrs.</p> <p>M1 for addition, A1 for 78.89 M1 for expression, M1 for simplification and A1 for 2.63hrs.</p> <p>B₁ seen/implied</p> <p>B₁ for time</p> <p>B₁ for stating consumption</p>	4 mks	<p>B₁, for each relative route correctly drawn × 4 = 4mks B₁, for each bearing drawn correctly 135°, 180° and Western direction and B1 for complete sketch.</p>	
Total	24			

Item 4:

Basis	Competency	Evidence/Skill	Score	Distribution of Score
<ul style="list-style-type: none"> ■ Organization of data. ■ Computation of expenses. ■ Representing data graphically. 	<ul style="list-style-type: none"> Ability to understand and use matrices. Learners are able to identify appropriate graphs. Learners should plot, interpret and use graphs to solve problems. Learner understands use of ratios and proportions. 	<p>Ab P M S R B 1 5 2 2 F 5 3 0 4 E 4 0 0 8 2 3 4 3</p> <p>($\begin{pmatrix} 1 & 5 & 2 & 2 \\ 5 & 3 & 0 & 4 \\ 4 & 0 & 0 & 8 \\ 2 & 3 & 4 & 3 \end{pmatrix}$) ($\begin{pmatrix} 1000000 \\ 750000 \\ 600000 \\ 200000 \end{pmatrix}$)</p> <p>Aboth spent 100,000 + 375,000 + Balikoowa Dumba Ekotu</p> <p>Ekotu</p> <p>000 75000 60000 200000) order matrices</p> <p>120,000 + 400,000 = Ugx 995,000</p> <p>d)</p> <p>$2 + 3 \frac{1}{2} + 5 + 2 \frac{1}{2} = 13$</p> <p>Aboth $\frac{2}{13} \times 7,150,000$</p> <p>Balikoowa got $\frac{3}{13} \times 7,150,000$</p> <p>Dumba got $\frac{5}{13} \times 7,150,000$</p> <p>Ekotu got $\frac{2}{13} \times 7,150,000$</p> <p>e)</p> <p>Profits made by: 1,100,000 - Balikoowa 1,925,000 - 1,525,000 = Ugx 400,000 Dumba 2,750,000 - 2,000,000 = Ugx 750,000 Ekotu 1,375,000 - 1,265,000 = Ugx 110,000 Dumba got maximum profits</p>	<p>1 mk</p> <p>1 mk</p> <p>1 mk</p> <p>1 mk</p> <p>8 mks</p> <p>9 mks</p> <p>5 mks</p> <p>25 mks</p>	<p>B1 for item matrix 4x4</p> <p>B1 for cost matrix 4x1/1x4</p> <p>B1 for both orders</p> <p>M1 for expression, A1 for ans. M1 for expression, A1 for ans. M1 for expression, A1 for ans. M1 for sum = 13</p> <p>M1 for expression, A1 for ans. M1 for expression, A1 for ans. M1 for expression, A1 for ans. M1 for expression, A1 for ans.</p> <p>B1 for Abot's profit B1 for Balikoowa's profit B1 for Dumba's profit B1 for Ekotu's profit B1 for Dumba</p>
	b) 4x4 by 4x1	4x4 and 4x1		
	c) ii. Cost matrix (100)			