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NATIONAL SENIOR CERTIFICATE

GRADE 12

JUNE 2022

MATHEMATICAL LITERACY P1 MARKING GUIDELINE

MARKS: 100

Symbol	Explanation	
Μ	Method	
MA	Method with accuracy	
CA	Consistent accuracy	
А	Accuracy	
С	Conversion	
S	Simplification	
RT/RG/RM	Reading from a table/graph/map	
F	Choosing the correct formula	
SF	Correct substitution in a formula	
J	Justification	
Р	Penalty, e.g., for no units, incorrect rounding off etc.	
R	Rounding off/Reason	
AO	Answer only	
NPR	No penalty for correct rounding off to minimum of two decimal	
	places	

This marking guideline consists of 8 pages.

MARKING GUIDELINES

NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled version).
- Consistent Accuracy (CA) applies in ALL aspects of the marking guidelines; however, it stops at the second calculation error.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra incorrect item presented.

LET WEL:

- As 'n kandidaat 'n vraag TWEE keer beantwoord merk slegs die EERSTE poging.
- As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.
- Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyn toegepas, maar dit hou by die tweede berekeningsfout op.
- Wanneer 'n kandidaat aflees van 'n grafiek, tabel, uitlegplan en kaart en ekstra antwoorde gee, penaliseer vir elke ekstra item.

QUES	QUESTION 1 [20 MARKS]		
Que	Solution	Explanation/Marks	
		AO: FULL MARKS	T/L
1.1.1	$\frac{18,25}{100} = \frac{1825}{100} \sqrt{M}$	1M fraction	F
	$\frac{100}{100} = \frac{10000}{10000}$	1A answer in a	L1
	72 ()	reduced form	*
	$=\frac{73}{400}$ \checkmark A	(2)	
1.1.2	% of price = $100 - 18,25\%$		F
	$= 81,75\%$ \checkmark M	1M subtraction	L1
-	$Price = \frac{81,75}{3} \times 380 \sqrt{M}$		*
	$100 \times 300^{\circ}$ M	1M % calculation	
	$= R310.65 \checkmark CA$		
		1CA answer	
	OR	OR	
		1M % calculation	
	Reduction $=\frac{18,25}{100} \times 380$	1M subtraction	
	$= R69.35 \checkmark M$	1CA answer	
	Price = $R_{380} - 69.35 \checkmark M$		
	$= R310.65 \checkmark CA$	(3)	
1.2.1	Difference = $R469 - (-R447) \checkmark CA$	1 RT for the two	F
	$=$ R916 million \checkmark RT	correct values	L1
		$1 \text{ CA answer} \qquad (2)$	21
1.2.2	$Total = 265 + 277 + 326 + 390 + 447 + 458 + 486 - (469 + 300) \checkmark M$	1M addition (+) and	F
	$= 1880 \text{ million } \checkmark \text{CA}$	subtraction (–) of the	L1
		values	
		1CA (2)	
1.3.1	Weekend wage rate $-\frac{3}{2} \times 25 \sqrt{MA}$	1MA multiplication	F
	Weekend wage fate $= \frac{2}{2}$ 25 min f	1A answer	L1
	$=$ R37,50 \checkmark A	(2)	*
1.3.2	✓M	1M multiplications	F
	Earnings = $6 \times 25 + 37,50 \times 4$ \checkmark MA	-	L1
		1MA addition	*
	$= R300 \checkmark CA$	1CA answer (3)	
1.4.1	Discrete $\checkmark \checkmark A$	2A answer (2)	D
			L1
1.4.2	Game ✓√RT	2RT answer	D
		(2)	L1
1.4.3	Total games = $4 + 6 + 5 + 4 + 1 + 2 + 2 = 24$ games $\checkmark M \checkmark CA$	1M adding the games	D
	-	1CA answer (2)	L1
		[20]	
		[20]	

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(EC/JUNE 2022)

QUES	QUESTION 2 [18 MARKS]		
Que	Solution	Explanation/Marks	
-		AO: FULL MARKS	T/L
2.1.1	Time 4 hours $\checkmark \checkmark RT$	2RT	F
		(2)	L2
2.1.2	From graph:		F
	2 welders complete 1 frame in 4 hours \checkmark M		L3
	2:1	1M value from graph	
	20 : ? frame in 4 hours	1M numerator	
	Frames = $\frac{20 \times 1}{\sqrt{3}} \sqrt{M}$	1M denominator	
	$\frac{2}{-10}$ frames \checkmark Δ	1A answer	
	OR	OR	
	$n \times t = 8$	1SF substitution	
	$\frac{1}{20} \times t = 8 \checkmark SF$	1S simplification for	
	$t = \frac{8}{20}$	2,5 frames done in 1	
	$= 0.4$ hours to make 1 frame by 20 welders \checkmark S	hour by 20 welders	
	In four hours = $4/0.4 \checkmark M = 10$ frames $\checkmark A$	1M multiplication	
		1A answer (4)	
	✓ M	1M correct values for	
2.2.1	$A = \frac{28 - 25,81}{25,04} \times 100\% \checkmark MA$	numerator and	F
	-8.485%	denominator	L2
	$= 85\%\sqrt{C}$	M % calculation	
		1CA (3)	
		(NPR)	
2.2.2	Cost: Up to 6 $k\ell = R0$ = $R0 \checkmark M$		F
		IM cost in block I	L3
	$6 - 25 \text{ kl} = 19 \text{ k} \times \text{R}23,60 = \text{R}448,40 \bullet \text{M}$	1M	
	25 2011 511 \times D2220 D16100 \cdot M	TWI cost in block 2	
	$25 - 30 \text{ Kl} = 5 \text{ Kl} \times \text{R}32, 20 = \text{R}161, 00 \text{ VI}$	1M cost in block 2	
	$\sim M$	1 NI COST III DIOCK 5	
	101AL COS1 = R448,40+R101,00 = R000,40 VCA	1CA ensure (5)	
221	Solomy $P = P2 102.05 \pm 15.761.80$ \sqrt{M}	1M adding the two	Б
2.3.1	$= D18 052 85 \sqrt{C\Delta}$	halances	
	- K10 755,05 · CA	1 CA answer (2)	
232	Bank fees for March $= 42.37 \pm 17.47 \pm 100.88$./M	1 CA answer (2)	F
2.3.2	$- R 160.72 \checkmark C \Delta$	March	
	- K100,72 · CA	1CA answer (2)	
		[107 answer (2)	
1		[10]	1

QUESTION 3 [21 MARKS]			
Quest.	Solution	Explanation/Marks AO: FULL MARKS	T/L
3.1	2020 ✓A Reason: Covid-19 pandemic ✓J	1A year	D
		1J reason (2)	L1
3.2	✓M	1M subtracting from	D
	$C = 25\ 285,1 - (2093,5+2092,8+2249,4+1988,8+1750,5)$	25 285,1	L2
	+1964,7+2067,1+2204,4+2308,0+2267,8+2493,4)	1M addition of all other	*
	$= 1804,7 \checkmark M$	values	
	✓CA	1CA answer (3)	
3.3	descending order: $\checkmark RT$	1RT all values including	D
	2493,4; 2308,0; 2267,8; 2249,4; 2204,4; 2093,5; 2092,8	value from 3.2	L2
	2067,1; 1988,8; 1964,7: 1804,7;1750,5 ✓CA	1CA order with value	*
		from 3.2 (2)	
3.4	✓RT	1RT highest and lowest	D
	Range = $2262, 3 - 33, 8 \checkmark M$	values	L2
	$= 2 228,5$ million \checkmark CA	1M concept of range	
		1CA answer (3)	
3.5	✓M.	1M concept of mean	D
	Mean income for $2018 = \frac{24846,4}{12} = 2070,53$ million \checkmark A	1A mean for 2018	L4
	12		*
	Mean income for $2020 = \frac{9818,5}{12} = 818,21$ million $\checkmark A$	1A mean for 2020	
	Double mean income for $2020 = 818,21 \times 2 = 1636,42 \checkmark M$ Million		
		1M comparing values of	
	Mean income for 2018 (2 070,53) is greater than double	mean 2018 and double	
	mean income for 2020 (1636,42)	mean income for 2020	
	Statement Valid ✓J	1J valid statement. NPR	
		(6)	_
3.6	From 2018 December income dropped right through up to	IJ justification for the	
	July 2019; then increased from August 2019 to December	period Dec 2018 to July	L4
	2019. It remained high up to March 2020. \checkmark J	2019	
	I nen it dropped drastically in from April 2020 and remained	1J justification for the	
	10W IN 2020. V J	period August 2019 to	
27		$\frac{2020}{14 \text{ first month}} $	
5.1	May A	IA first months	
	and June V A	IA second months.	L2
		CA from 3.2 (2)	
		[20]	

Que	Solution	Explanation/Marks AO: FULL MARKS	T/L
4.1.1	Values of dependent variable at break-even point	1RT value for income	F
	Income = $R300 \checkmark RT$	1RT value for expenses	L2
	Expenses = $R300 \checkmark RT$	(2)	
4.1.2	Total sales in a week = 37 packets \checkmark RT	1RT adding sales from	F
	From Graph: Income = $R555 \checkmark RT$	table	L2
	Expenses = $R385 \checkmark RT$	1RT reading income	
	$Profit = R555 - R385 = R170 \checkmark CA$	from graph	
		1RT expenses from	
		graph	
	OR	1CA answer for profit	
		OR	
	Total sales = $37 \sqrt{RT}$	1RT total sales	
	Income= $37 \times 15 = R555 \checkmark SF$	1SF for income	
	Expenses = $200+37 \times 5 = R385 \checkmark SF$	1SF for expenses	
	Profit = R555 – R385 = R170 ✓CA	1CA answer for profit (4)	
4.2.1	Year 2009 ✓✓RT	2RT for the year (2)	F
4 2 2	East in 2015 1 002 × D12 500 D12 662 50 () 6	(2)	L2 E
4.2.2	Fees in $2015 = 1,095 \times R12500 = R13602,50 \vee M$	IM value from	
	Cost of friday in 2015 1.04× D12 500 D12 000 (M	inultiplication with	L4
	Cost of fridge in $2015 = 1,04 \times R12 \ 500 = R15 \ 000 \vee M$	1 M value from	
	Difference D12 ((2.50 D12 500 D((2.50 (CA	IM value from	
	Difference = $R13 662, 50 - R12 500 = R662, 50 \vee CA$	multiplication with	
		general inflation rate	
4.0.0		ICA answer (3)	Б
4.2.3	The graph shows education has constantly outstripped	2J justification as from	
	general inflation. •• J	graph.	L4
4 2 1	A manual of manual of the D. D. V./DT./A	(2)	Б
4.3.1	Arrangement of currencies: $t; t; t; s; P; R; t \in R I \bullet R$	IRI all currencies	
		IA order according to	L3
422	1V - P0.1292	strength (2)	Б
4.3.2	1 = KU, 1383	1M converting the	
	39/4,80 = K!	I'vi converting the	L2
	Cost of 1 in Rands = $39/4,85 \times 0,1383^{\circ}$ M	Japanese yens to Rands	
	= K549, 72 V A	IA cost of one DVD	
	Cost of 500 DVD players = 500×549 ,72		
	$= R2/4 860,88 \forall CA$	ICA answer for cost of	
		500 DVDs (3)	
		[18]	

QUESTION 5 [25 MARKS]			
Quest.	Solution	Explanation/Marks AO: FULL MARKS	T/L
5.1.1	Tax bracket = $4 \checkmark RT$	2RT bracket (2)	F L1
5.1.2	R128 650 ✓√RT	2RT value of threshold (2)	F L2
5.1.3	Monthly income = R35 455		F L4
	Annual income = R35 455× 12 = R425 460,00 \checkmark MA Pension: 7,5% of R425 460 = $\frac{7,5}{100}$ × R425 460,00 = R31 909,50 \checkmark A	1MA multiplication by 12 and annual income 1A the annual pension	
	Taxable Income = R425 460,00 - R31 909,50 = R393 550,50 \checkmark CA Tax = R67 144 + $\frac{31}{100} \times (393 550,50 - 321 600) \checkmark$ M	1CA taxable income 1M use of correct tax bracket	
	$= R67 \ 144 + \frac{31}{100} \times 71 \ 950,50$ $= R67 \ 144 + 22 \ 304,655$	1CA tax payable before rebates	
	= R89 448,655 \checkmark CA Tax less the rebates = R89 448,655 - (R14 958+R8199) Annual tax payable = R66 291,655 \checkmark M	1RT Total value of rebates 1M subtracting rebates and tax after rebates (7)	
5.2.1	✓RT 2,27%; 5,04%; 5,05%; 5,90%; 6,68%; 7,24%; 13,38%; 16,15%; 38,28%. ✓M Median value = 6,68% giving EC ✓CA	1RT all values from graph 1M arranging in order descending or ascending 1CA median value: EC (3)	D L2
5.2.2	$Q1 = \frac{5,04+5,05}{2} \checkmark M$ = 5,045% \sqcar{A}	1M concept of getting Quartile 1 1A for Q1	D L3
	$Q3 = \frac{13,38 + 16,15}{2} = 14,765\% \checkmark A$	1A for Q3	
	$IQR = Q3-Q1 = 14,765\% - 5,045\% \checkmark M = 9,72\% \checkmark CA$	1M method of subtracting Q3-Q1 1CA answer(5)	
5.2.3	Probability is the chance that an event is likely to happen. $\checkmark \checkmark A$	2A explanation (2)	P L1

(EC/JUNE 2022)

5.2.4	Probability for $GP = 0.3828$ $\checkmark CA$	1CA converting 5 to	Р
	Probability for EC = $0,0668 \checkmark CA$	decimal for QP	L3
	Probability for a car to be in GP OR EC = $0,3828 +$	1CA converting to	
	$0,0668 = 0,4496 \checkmark A$	decimal for EC	
		1A answer (3)	
		[24]	
	TOTAL:	100	