KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

PREPARATORY EXAMINATION

MARKING GUIDELINE

SEPTEMBER 2022

MARKS: 150

SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
CA/MCA	Consistent accuracy/ Method with Consistency Accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RD/RM	Reading from a table/ graph/ diagram/map
SF	Correct substitution in a formula
O	Opinion/ reason/deduction/example/Explanation
J	Justification
R	Rounding off
F	deriving a formula
AO	Answer only full marks
P	Penalty e.g. for units, incorrect rounding off etc.
NPR	No penalty for rounding / units

This marking guideline consists of 9 pages.

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QUESTION 1 [30 MARKS] (Answer Only (AO) Full marks)			
Ques	**Solution**	**Explanation**	**T & L**
1.1.1	Monday✓✓RT	2RT correct answer (2)	DH L1
1.1.2	Total = 2 + 23 + 17 + 7✓MA = 49✓A	1MA adding all correct values 1A correct answer (2)	DH L1
1.1.3	16✓✓ RT / RG	2RT/RG Correct answer (2)	DH L1
1.1.4	range = 30 − 1✓M = 29✓A	1M Subtraction 1A Correct answer (2)	DH L1
1.1.5	08: 00 − 11: 59✓✓RT **OR** C✓✓RT	2RT Correct amount (2)	DH L1
1.2.1	10%✓✓A	2A Correct percentage (2)	F L1
1.2.2	2021 fees = R17 500 ÷ 110%✓M = R15 909✓A **OR** 2021 fees = R17 500 × 100 ÷ 110✓M = R15 909✓A **OR** 2021 fees = R17 500 ÷ 1,10✓M = R15 909✓A	1M dividing by 110% 1A Correct answer **OR** 1M multiplying by 100 and dividing by 110 1A Correct answer **OR** 1M dividing by 1,10 1A Correct answer (2)	F L1
1.2.3	Monthly payment = R17 500 ÷ 10✓M = R1 750✓A	**CA from 1.2.2** 1M dividing by 10 1A Correct answer (2)	F L2
1.2.4	Annual increase = R17 500 − R15 909✓M = R1 591✓A	1M Subtraction 1A Correct answer (2)	F L1
1.3.1	All expenses including fixed costs incurred in baking muffins✓✓O	2O explanation (2)	F L1
1.3.2	A is the graph for Total Income✓A B is the graph for Total Cost✓A	1A Total Income 1A Total Cost (2)	F L1
1.3.3	R500✓✓RG	2RG Correct answer (2)	F L1
1.3.4	Cost of baking 300 muffins: = R1500 ✓✓RG	2RG Correct value (2)	F L1
1.3.5	Selling Price = R500 ÷ 100✓M = R5✓A	1M dividing by 100 1A Correct answer (2)	F L1
1.3.6	250 muffins✓✓RG	2RG Correct answer	F

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		(2)	L1
		[30]	

QUESTION 2 [38 MARKS]

Ques	Solution	Explanation	T & L
2.1.1	Money left after expenses have been paid✓✓O	2O explanation (2)	F L1
2.1.2	Total Expenditure = 78 556 + 50 753 + 2 595 + 17 659 + 16 982 + 11 932 + 39 052 + 12 125 + 101 502 + 27 294 + 81 680 + 4 + 365✓M = 440 499✓A difference = 450 864 − 440 499✓M = 10 365	2M adding expenses 1A Correct answer 1M subtracting **NPR** (3)	F L3
2.1.3	% difference = $\frac{259 - 365✓RT}{365} \times 100\%✓SF$ = −29,04%✓A The claim is NOT true✓O	1RT Correct values 1SF substitution 1A Correct answer 1O (4)	F L4
2.1.4	$\frac{5✓A}{13✓A} \times 100 = 38,46\%✓CA$	1A numerator 1A denominator 1CA Correct percentage **NPR** (3)	P L2
2.2.1	Amount owed by the school for electricity brought forward at the start of the account period✓✓O	2O explanation (2)	F L1
2.2.2	✓RT ✓M A = 974 631 − 959 619 = 15 012	1RT both correct values 1M for subtraction (2)	F L1
2.2.3	B = R16 677,22 + R13 805,86 + R555,86 + R2 501,25✓M = R33 540,19✓A	1M for adding 1A Correct answer (2)	F L2
2.2.4	VAT exclusive amount = R33 540,19 ÷ 1,15✓M = R29 165,38✓CA **OR** VAT exclusive amount = R33 540,19 × 100 ÷ 115✓M = R29 165,38✓CA **OR** VAT exclusive amount = R33 540,19 ÷ 115%✓M = R29 165,38✓CA	**CA from 2.2.3** 1M dividing by 1,15 1A Correct answer 1M dividing by 115 1A Correct answer 1M dividing by 1,15 1A Correct answer	F

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	VAT exclusive amount= R33 540,19 ×(15÷ 115) ✓M =R29 165,38✓CA VAT = R33 540,19 − R29 165,38✓M = R4 374,81 YES it was calculated correctly✓O	1M dividing by 115 1A Correct answer 1M subtracting 1O opinion (4)	L4

2.3.1	✓M ✓M (a) Annual taxable income = 12(R42 000 − R2 500) = R474 000✓CA **OR** (a) Annual taxable income = 12 × R42 000) − (12 × R2 500)✓M = R504 000 − R30 000✓S = R474 000✓CA	1M multiplying by 12 1M subtracting R2 500 1CA Correct answer **OR** 1M multiplying by 12 1S simplifying 1CA Correct answer (3)	F L2
	✓M ✓M ✓M (b) Annual Medical Tax Credits = 12(2 × R332 + 3 × R224) = R16 032✓CA **OR** (b) Annual Medical Tax Credits = (12 × R664) + (12 × R672)✓✓M = R7 968 + R8 064 ✓S = R16 032✓CA	1M multiplying by 12 1M multiplying 332 by 2 1M multiplying 224 by 3 1CA Correct answer **OR** 1M multiplying by R664 1M multiplying by R672 1S simplification 1CA Correct answer (4)	F L3
2.3.2	✓A Annual tax = R73 726 + 31%(R474 000 − R353 100)✓SF ✓M ✓M ✓M = R111 205 − 15714 − 24 327 − 16 032 = R55 132✓CA Monthly tax = R55 132 ÷ 12✓M = R4 594,33✓CA Claim is INCORRECT✓O	**CA from 2.3.1** 1A Correct Tax bracket 1SF Correct substitution 2M Subtracting both rebates 1M Subtracting MTC 1CA Correct answer 1M Dividing by 12 1CA Correct answer 1O Opinion (9)	F L4
		[38]	

QUESTION 3 [21 MARKS]			
Ques	**Solution**	**Explanation**	**T & L**
3.1.1	The mode is the data values of the factors influencing adolescent pregnancy that occurs most often or frequently. ✓✓O	2O explanation (2)	DH L1
3.1.2	discrete✓✓A	2A Correct answer (2)	DH L1
3.1.3	Compound/multiple bar graph✓A Easy comparison of different responses/Data✓O Easy interpretation of different responses/Data✓O	1A Correct answer 1O opinion (2)	DH L4
3.1.4	Poor knowledge✓✓A	2A Correct answer (2)	DH L2
3.1.5	Number of girls $= 74\% \times 150$✓M $= 111$✓A	1M multiplying by 74% 1A Correct answer (2)	DH L2
3.1.6	Negatively affected by outlier(s)✓✓A	2A answer (2)	DH L1
3.2.1	$F = 76{,}8\% - 77{,}6\%$✓M $= -0{,}8\%$✓A	1M subtracting 1A Correct answer (2)	DH L2
3.2.2	5,4%; 4,9%; 2,0%; 1,3%; 0,6%; −0,1%; −0,5% − 0,8%; −1,5%✓✓M median = 0,6%✓A OR −1,5%; −0,8%; −0,5%; −0,1%; 0,6%; 1,3%; 2,0%; 4,9%; 5,4%✓✓M median = 0,6%✓A	2M Arranging in correct order 1A Correct answer 2M Arranging in correct order 1A Correct answer (3)	DH L2

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3.2.3	✓✓M mean = (85.1+ 83.3 + 79.9 + 76.2 + 77.6 + 73.7 + 68.1 + 66.0 + 68.2) ÷ 9 = 689,4% ÷ 9✓M = 76,6%✓A	2M adding percentages 1M dividing by 9 1A Correct answer (4)	DH L2
		[21]	

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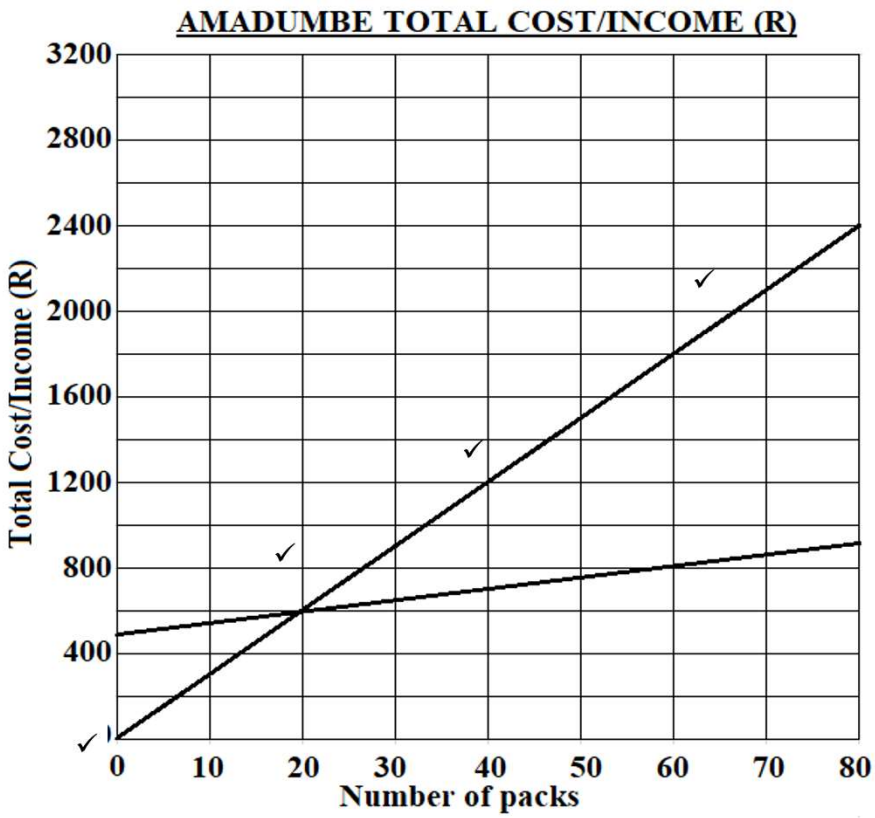
QUESTION 4 [32 MARKS]			
Ques	**Solution**	**Explanation**	**T & L**
4.1.1	Interest per year $= 9{,}8\% \times R60\,000$ ✓M $= R5\,880$ ✓A Total interest $= 6 \times R5\,880$ ✓M $= R35\,280$ ✓CA **OR** ✓A ✓M ✓M Simple Interest= R60 000 × 9.8% × 6 $= R35\,280$ ✓CA	1M multiplying by 9,8 1A Correct answer 1M multiplying by 6 1CA Correct answer 1A R60 000 investment 1M multiplying by 9,8% 1M multiplying by 6 1CA Correct answer (4)	F L2
4.1.2	2023: Increase $= 11{,}8\% \times R8\,500$ ✓M $= R1\,003$ ✓A Cost $= R8\,500 + R1\,003$ ✓M $= R9\,503$ ✓A 2024: Cost $= 9503 + (R9\,503 \times 9\%)$ ✓M $= R10\,358{,}27$ ✓✓A	1M multiplying 1A simplifying 1M adding 1A simplifying 1M multiplying by 9% 2A simplifying (7)	F L3

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4.1.3	Total cost in 2024 $= 11 \times$ R10 358,27✓M $=$ R113 940,97✓CA Total amount from investment $=$ R60 000 + R35 280✓M $=$ R95 280✓A He will NOT have enough money✓O	**CA from 4.1.2** 1M multiplying 1CA simplification 1M adding 1A Correct answer 1O opinion (5)	F L4
4.1.4	\$1 450 = R21 117,51 \$1 $= \frac{\text{R21 117,51}}{\text{1 450}}$ ✓M $=$ R14,56✓A	 1M dividing by 1450 1A for Correct answer (2)	F L2
4.2.1	Organising data✓✓A	2 correct answer (2)	DH L1
4.2.2	✓M Number of cows less 170kg $= 20 + 7 + 11 + 4 + 2$ $= 44$✓A	 1M adding 1A Correct answer (2)	DH L2
4.2.3	Percentage of cows = (71÷125) ×100✓M = 56,8%✓A	1M multiplying 1A Correct answer (2)	
4.3.1	**G** $= 460 - 350$ ✓M $= 110$ ✓A **OR** **G** = 380 – 270 ✓M = 110 ✓A **OR** **H** $= 1\,550 - 460$ ✓M $= 1\,090$ ✓A **OR** **H** $= 820 + 270$ ✓M = 1090 ✓A	 1M Subtraction 1A Correct answer **OR** 1M Subtraction 1A Correct answer **OR** 1M Subtraction 1A Correct answer **OR** 1M Addition 1A Correct answer (4)	P L2
4.3.2	P (boy that passed the test) $= \frac{350\text{✓M}}{1\,170\text{✓M}} = \frac{35\text{✓A}}{117\text{✓A}}$	1M for 350 1M for 1 170 1A for 35 1A for 117 (4)	P L2
		[32]	

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QUESTION 5 [29 MARKS]

Ques	Solution	Explanation	T & L
5.1.1	$P = R500 + R5 \times 20$✓SF $= R600$✓A $Q = (R825 - R500) \div R5$✓M $= 65$✓A	1SF substitution 1A Correct answer 1M method 1A Correct answer (4)	F L2
5.1.2		1A initial point 1A intersection point 1A any correct point on line 1A joining the points (4)	F L3
5.1.3	It helps her understand the number of packs she needs to sell to cover her cost✓✓O	2O	F L4

		(2)	
5.2.1	✓C ✓M Real cost of the loan = 72 × R2 208 = R158 976✓A	1C conversion 1M multiplying by 72 1A Correct answer (3)	F L3
5.2.2	Loan amount = R150 000 − R30 000✓M = R120 000✓A Total Interest = R158 976 − R120 000✓M = R38 976✓CA	**CA from 5.2.1** 1M subtraction 1A simplifying 1M Subtracting 1A Correct answer (4)	F L3

Ques	Solution	Explanation	T & L
5.3.1	minimum = 67%✓RD maximum = 86%✓RD	1RD minimum value 1RD maximum value (2)	DH L2
5.3.2	Range = 86% − 67%✓M = 19%✓A IQR = 81% − 73%✓SF = 8%✓CA difference = 20% − 8%✓M = 12% Statement is CORRECT✓O	1M Subtracting 1A Correct answer 1SF Correct Substitution 1CA Correct answer 1M Subtraction 1O Opinion (6)	DH L4
5.3.3	Free State pass rate = 86%✓RD Percentage for failures = 14%✓A	1RD pass 1A failure rate	DH

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	Number of failures $= 14\% \times 35\,055$✓M $= 4\,908$✓A **OR** Number of passes $= 86\% \times 35\,055$✓M $= 30\,147{,}3$✓A Number of failures $= 35\,055 - 30\,147{,}3$✓M $= 4\,908$✓A	1M multiplying 1A Correct answer **OR** 1M multiplying by 86% 1A simplifying 1M subtracting 1A Correct answer (4)	L3
		[29]	
		TOTAL MARKS: 150	

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