KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P1

PREPARATORY EXAMINATION

MARKING GUIDELINE

SEPTEMBER 2021

MARKS: 150

SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
CA	Consistent 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 10 pages.

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QUESTION 1 [30 MARKS]			
Ques	**Solution**	**Explanation**	**T & L**
1.1.1	Compound bar graph✓✓A **OR** Multiple Bar graph✓✓A	2A correct answer (2)	DH L1
1.1.2	76,5%✓✓RT	2RT reading from table (2)	DH L1
1.1.3	North West and Northern Cape✓✓RT	1RT for NW 1RT for NC (2)	DH L1
1.1.4	11 189; 10 984; 9 400; 9 392; 3 039; 1 784; 1 213; 1 057; 650✓✓A	2A answer (2)	DH L1
1.1.5	There is no relationship✓✓A	2A amount (2)	DH L1
1.2.1	337674956✓✓A	2A answer (2)	F L1
1.2.2	01 April 2021 **OR** 01/04/2021✓✓A	2A answer (2)	F L1
1.2.3	Value Added Tax✓✓A	2A answer (2)	F L1
1.2.4	R101,70✓✓RG	2RG correct reading (2)	F L1
1.3.1	The amount buyers will pay for the goods Xolani is selling✓✓O	2E explanation (2)	F L1
1.3.2	R11,99✓✓A	2A correct answer (2)	F L1
1.3.3	Coke cans✓A Oil Sunola✓A Lucky Star Fish✓A	1A for Coke cans 1A for Oil Sunola 1A for Lucky Star Fish (3)	F L1
1.3.4	Number of cans = $\frac{R92,99}{R15,49}$ ✓M = 6 ✓A	1M dividing 1A simplification **AO** (2)	F L1

1.3.5	Total Cost Price $= R524,99 + R204,99 + R204,99 + R204,99$ $+R144,99 + R107,99 + R92,99 + R88,99$ $+R66,99$✓A✓M $= R1\ 641,91$✓CA	1A all correct values 1M adding 1CA answer **2 values left out** **1 out of 3** (3)	F L1
		[30]	

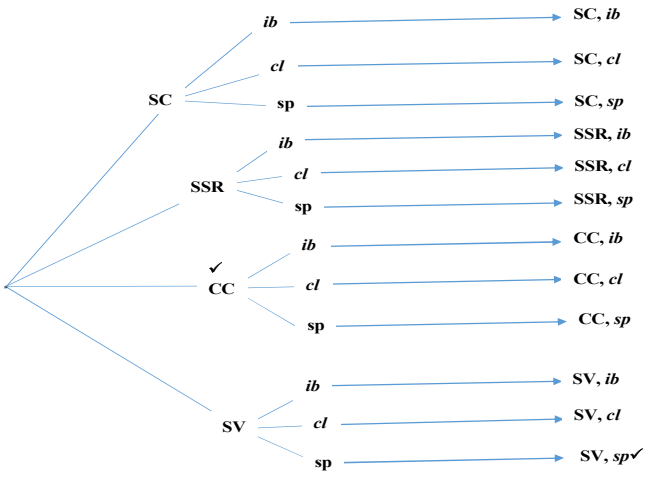
QUESTION 2 [45 MARKS]			
2.1.1	R100✓✓RT	2RT correct reading (2)	F L1
2.1.2 (a)	R6 121,00✓✓RT	2RT correct reading (2)	F L1
2.1.2 (b)	$\text{Percentage} = \frac{R6\ 121 - R8\ 481\text{✓MA}}{R8\ 481\text{✓M}} \times 100\%$ $= -27,83\%$✓A **OR** $\text{Percentage decrease} = \frac{R8\ 481 - R6\ 121\text{✓MA}}{R8\ 481\text{✓M}} \times 100\%$ $= 27,83\%$✓A	1MA subtracting correct values 1M dividing by R8 481 1A answer **OR** 1SF for substitution 1M dividing by R8 481 1A answer (3)	F L2
2.1.3	✓RT ✓MA ✓MA $R1\ 462,72 - R165,00 + R23,35 = R1\ 321,07$	1RT for R1 462,72 1MA subtracting R165 1MA adding R23,35 (3)	F L2
2.1.4	R23,35✓✓RT	2RT correct answer (2)	F L1
2.2.1	Primary Rebate (R14 958)✓✓A	1A for Primary Rebate 1A for R14 958 (2)	F L1
2.2.2	Monthly Pension Contribution $= 7,5\% \times R32\ 800$✓M $= R2\ 460$✓A	1M multiplying by 7,5% 1A answer (2)	F L2
2.2.3	January taxable income $= 2(R32\ 800) - R2\ 460 + R7\ 100$✓✓M $= R70\ 240$✓CA	**CA from 2.2.2** 1M for R65 600 and adding R7 100 1M for subtracting 2 460 1CA answer (3)	F L2
2.2.4	Annual MTC $= 12[2(R319) + 3(R215)]$✓MA $= R15\ 396$✓CA	1MA multiplying by 12 1CA answer (2)	F L2

2.2.5	Annual taxable income excluding bonus: Annual taxable income $= 12(\text{R}39\,900 - \text{R}2\,460)$✓M $= \text{R}449\,280$✓CA Annual tax excluding bonus: Tax $= \text{R}105\,429 + 36\%(\text{R}449\,280 - \text{R}445\,100) - \text{R}14\,958 - \text{R}15\,396$✓A✓M $= \text{R}76\,579{,}80$✓CA Monthly tax $= \text{R}76\,579{,}80 \div 12$✓M $= \text{R}6\,381{,}65$✓CA	**CA from 2.2.2 and 2.2.4** 1M multiplying by 12 1CA answer 1A correct tax rate 1M subtracting rebate and MTC 1CA answer/accuracy 1M dividing by 12 1CA answer/accuracy (7)	F L3
2.2.6	Tax deducted $= \text{R}6\,381{,}65 + \text{R}11\,808$✓SF $= \text{R}18\,189{,}65$✓CA	**CA from 2.2.5** 1SF substitution 1CA answer (2)	F L2
2.3.1	Number of bulbs $= 7$✓A Cost for lighting the house $= 7 \times \text{R}31{,}41$✓M $= \text{R}219{,}87$✓CA	1A number of bulbs 1M multiplying by 7 1CA answer (3)	F L2
2.3.2	**7 bulbs**: $\text{R}31{,}41 \times 7 = \text{R}219{,}87$ **Stove**: $\text{R}141{,}35 + \text{R}52{,}35 + \text{R}188{,}46 + \text{R}31{,}41$✓M $= \text{R}413{,}57$✓A **3 Cellphone chargers**: $3 \times \text{R}2{,}05 = \text{R}6{,}15$✓A Total $= \text{R}219{,}87 + \text{R}413{,}57 + \text{R}6{,}15 + \text{R}1\,126{,}77$✓M $= \text{R}1\,766{,}36$✓CA Claim is invalid✓O	**CA from 2.3.1** 1M adding stove cost 1A simplifying 1A simplifying 1M adding 1CA answer/accuracy 1O opinion (6)	F L4
2.3.3	Geyser: Charge $= 2 \times 2 \times 30 \times \text{R}2{,}0940\text{c}$✓M $= \text{R}251{,}28$✓CA **OR** Cost $= \frac{2}{5} \times \text{R}628{,}20$✓M $= \text{R}251{,}28$✓CA Stove: $\text{R}141{,}35 + \text{R}31{,}41 = \text{R}172{,}76$✓M Total $= \text{R}424{,}04$✓CA Claim is NOT valid✓O	1M multiplying by 2,094 1CA answer/accuracy **OR** 1M multiplying by $\frac{2}{5}$ 1CA answer/accuracy 1M adding 1CA total cost 1O opinion (5)	F L4
		[45]	

QUESTION 3 [28 MARKS]			
3.1.1	First 12 months: Interest $= 7.8\% \times$ R5 000,00✓M $=$ R390✓A = R5000+R390 Amount $=$ R5 390✓CA Last 12 months: Interest $= 7.8\% \times$ R5 390✓MA $=$ R420,42✓A = R5390+R420,42 Amount $=$ R5 810,42✓CA **OR** First 12 months: Interest $= 1.078 \times$ R5 000,00✓✓M Amount $=$ R5 390✓CA Last 12 months: Interest $= 1{,}078 \times$ R5 390✓✓MA Amount $=$ R5 810,42✓CA	1M multiplying by 7.8% 1A simplifying 1A answer (R5 390) 1MA multiplying by R5 390 1A simplifying 1CA answer **OR** 2M multiplying by 1,078 1CA answer (R5 390) 2MA multiplying by 1,078 1CA answer (6)	F L3
3.1.2	Option 2: Interest $= 9{,}5\% \times$ R5 000✓M $=$ R475✓A Total Amount $=$ R5 000 + 2(R475)✓M $=$ R5 950✓A **OR** Option 2: =R5000 + 2(R5000× 9,5%)✓✓M✓A =R5950✓A Option 1 is better✓O	1M multiplying by 9,5% 1A simplifying 1M multiplying by 2 1A answer 1O opinion **OR** 1M multiplying by 9,5% 1M multiplying by 2 1A adding interest 1A answer 1O opinion (5)	F L4
3.1.3	Increase $= 4{,}3\% \times$ R6,29 $\times$ 1 700✓M $=$ R459,80✓A ✓M Total to be paid: R6,29 $\times$ 1 700 + R459,80 $=$ R11 152,80✓CA **OR** ✓M Total to be paid $= 1{,}043 \times$ R6,29 $\times$ 1 700✓✓M $=$ R11 152,80✓A	1M multiplying 1A simplifying 1M multiplying by 1 700 1CA answer **OR** 2M for 1,043 1M for multiplying by 1700 1A answer (4)	F L2

3.2.1	$\text{Loan Amount} = 1{,}10 \times \text{R}780\,000$✓M $= \text{R}858\,000$✓A $\text{Monthly Repayment} = \frac{\text{R}858\,000 \times 8{,}74}{1\,000}$✓SF $= \text{R}7\,498{,}92$✓CA	1M multiplying 1A simplifying 1SF substitution 1CA answer (4)	F L2
3.2.2	$\text{Loan Period} = 300 \text{ months}$✓C $\text{Real Cost of Loan} = \text{R}7\,498{,}92 \times (12 \times 25)$✓M $= \text{R}2\,249\,676$✓CA	**CA from 3.2.1** 1C conversion 1M multiplying by 300 1CA answer (3)	F L2
3.2.3	$\text{Total interest} = \text{R}2\,249\,676 - \text{R}858\,000$✓M $= \text{R}1\,391\,676$✓CA	**CA from 3.2.3** 1M subtraction 1CA answer (2)	F L1
		[24]	

QUESTION 4 [25 MARKS]			
4.1.1	Discrete✓A Number of people is countable✓O	1A for discrete 1O for countable (2)	DH L4
4.1.2	1,8% ✓✓RG	2RG answer (2)	DH L1
4.1.3	15,2% × 126 058 811 ✓M = 19 160 939✓A	1M multiplying 1A simplification (2)	DH L2
4.1.4	Range $= 65,4 - 1,8$✓M $= 63,6\%$✓A	1M concept of range 1A for answer **AO** (2)	DH L2
4.1.5	Mean $= \frac{65,4 + 52,2 + 61,4 + 61,6 + 45 + 20,5 + 26,6 + 12,7 + 63,4 + 1,8 + 151 + 20,5 + 15,2 + 24,5}{14}$✓A✓M $= 34,71$✓CA $\approx 34,7\%$✓R	1A correct percentages 1M adding 1M dividing by 14 1CA answer 1R for rounding off (5)	DH L2
4.1.6	The median because the data entries are widely spread and there is an outlier (1,8%)✓✓A/J	2A/J answer with justification (2)	DH L3
4.1.7	Negatively affected by outlier(s)✓✓O	2O opinion Accept any reasonably answer according to the context (2)	DH L4

4.1.8	$\frac{8\checkmark CA}{14\checkmark A} \times 100\%$ $= 57{,}1\%\checkmark R$	**CA from 4.1.5** 1CA for 8 1A for 14 1R rounding off to 57,1% (3)	P L2
4.2.1		1A for CC 1A for sp (2)	P L3
4.2.2	$\frac{2\checkmark A}{12\checkmark A} = \frac{1}{6}\checkmark S$	1A for numerator 1A for denominator 1S simplifying (3)	P L2
		[25]	

QUESTION 5 [22 MARKS]			
5.1.1	Minimum $= 12\%$✓RG Maximum $= 96\%$✓RG	1RG for the minimum 1RG for the maximum (2)	DH L2
5.1.2	Lower Quartile Mark $= 28\%$✓RG Number of learners $= \frac{120\text{✓A}}{4\text{✓M}}$ $= 30$✓CA **OR** Lower Quartile Mark $= 28\%$✓RG Number of learners $= 25\%$ of 120✓A $= \frac{25}{100} \times 120$✓M $= 30$✓CA **OR** Lower Quartile Mark $= 28\%$✓RG Number of learners $= 0{,}25 \times 120$✓✓M $= 30$✓CA	1RGfor Lower Quartile 1A for 120 1M for dividing by 4 1CA for the answer **OR** 1RG for Lower Quartile 1A for 25% of 120 1M for method 1CA for the answer **OR** 1RGfor Lower Quartile 1M for 0,25 1M for multiplying 1CA for the answer (4)	DH L3
5.1.3	Lower Quartile $= 22\%$✓RG Upper Quartile $= 58\%$✓RG IQR $= 58\% - 22\%$✓SF $= 36\%$✓CA	1RG for Lower Quartile 1RG for Upper Quartile 1SF substitution 1CA for answer/accuracy (4)	DH L3
5.1.4	2019 Class ✓A Higher maximum mark✓O Higher Lower Quartile✓O Higher Upper Quartile✓O	1A for the class 1O maximum mark 1O for Lower Quartile 1O for Upper Quartile (4)	DH L4
5.2.1	Broken line graph✓✓A	2A answer (2)	DH L1
5.2.2	2019✓RG, 25%✓RG	1RG year 1RG percentage level (2)	DH L2

5.2.3	✓O ✓O Fraud in the middle management decreased from 2016 to 2020 ✓O ✓O while junior and senior management increased from 2016 to 2020.	2O describing the trend for middle managers 2O describing the trend for senior managers (4)	DH L4
5.2.4	R1,45 billion : $100 million R1 450 000 000 : $100 000 000✓A R1: $\frac{100\ 000\ 000}{1\ 450\ 000\ 000}$ ✓M R1: $0,06896…✓CA R1: $0,069 ✓R **OR** R1,45 billion : $100 million R1 450 million : $100 million✓A R1 : $\frac{100\ million}{1\ 450\ million}$ ✓M R1: $0,06896 ✓CA R 1: $0,069 ✓R	1A converting both values 1M dividing 1CA simplification 1R correct rounding **OR** 1A converting value 1M dividing 1CA simplification 1R correct rounding (4)	F L3
		[26]	
		TOTAL: 150 MARKS	

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