

SENIOR CERTIFICATE EXAMINATIONS

MATHEMATICAL LITERACY P1

2018

MARKING GUIDELINES

MARKS: 150

SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
MCA	Method with consistent accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RP	Reading from a table/graph/plan
SF	Correct substitution in a formula
O	Opinion/Example/Definition/Explanation
P	Penalty, e.g. for no units/incorrect rounding off, etc.
R	Rounding off
NPR	No penalty rounding or omitting units
AO	Answer only, if correct, full marks

NOTE: If there is an additional incorrect answer mark as follows:
If the solution contains the word “OR”, then penalty of 1 mark
If the solution contains the word “AND”, then mark only the first solution with a penalty of 1 mark.

These marking guidelines consist of 15 pages.

Question 1 [31 MARKS]AO Full Marks			
Ques	Solution	Explanation	T/L
1.1.1	Horizontal/double/compound/multiple ✓O bar graph ✓O	1O type 1O bar graph (2)	D L1
1.1.2	71,6%; 51%; 10,3%; 7,3%; 6,6% ✓RT ✓A	1RT reading all correct values 1A descending order If Johannesburg is used max 1 mark (2)	D L1
1.1.3	Step 6 ✓✓A	2A identifying correct Step Accept any identification in step 6 for Cape Town (2)	F L1
1.1.4	Cape Town ✓✓A	2A stating Cape Town Accept JHB Step 1 full marks (2)	F L1
1.1.5	Cost = 3,5 kℓ × R7,14 = R24,99 ✓RT ✓A	1RT for R7,14 1A simplification CA only if R4,56 is used Accept R25 full marks (2)	F L1
1.1.6	Numerical ✓✓A	2A stating numerical Accept numerically full marks (2)	D L1
1.2.1	Selling price minus profit ✓✓A OR The amount of money needed (for raw material, labour, etc.) to make an item ✓✓A	2A correct definition Accept: Amount you pay for buying stock/clocks Money you receive without profit. Price before mark-up is added. (2)	F L1
1.2.2	Cost price = R3 350 – R914 = R2 436 ✓RT ✓A	1RT correct values 1A simplification (2)	F L1

Ques	Solution	Explanation	T/L
1.2.3	✓A 22:08 ✓A	1A correct hours 1A correct minutes (2)	M L1
1.2.4	✓MA Total profit = R914 + R60 + R573 + R1623 = R3170,00 ✓CA	1MA adding all correct values 1CA simplification (2)	F L1
1.3.1	Converting scale reading ✓M = 394 g ÷ 1 000 = 0,394 kg ✓A	1M dividing by 1 000 1A simplification (2)	M L1
1.3.2	✓M New reading = 394 – 128 = 266g ✓A	1M subtracting correct values 1A simplification (2)	M L1
1.3.3	✓M Peach = 394 – 128 – (128 ÷ 2) = 394 – 192 ✓A = 202 g OR Plum = 128 g ÷ 2 ✓M = 64 g ✓A Peach = 266 g – 64 g ✓M = 202 g	1M subtraction from 394 1M dividing 128 by 2 1A for 192 OR 1M dividing pear by 2 1A plum 64g 1M subtracting two values (3)	M L1
1.3.4	0% OR 0 OR $\frac{0}{3}$ ✓✓A	2A solution Accept impossible - full marks (2)	P L1
1.3.5	394g : 128g ✓M 197 : 64 ✓A	1M concept of ratio 1A ratio without units Accept: Reverse the order with simplification one mark Unit ratio 1: 0,325 OR 3,08:1 one mark Correct fractional form – full marks (2)	M L1
		[31]	

QUESTION 2 [38MARKS]			
Ques	Solution	Explanation	T/L
2.1.1	December ✓✓A OR The twelfth month of the year ✓✓A OR The last month of the year ✓✓A	2A correct month Accept: Mid Nov. to mid Dec. } Full marks Nov / Dec 12 8/9/15 Dec max one mark (2)	F L1
2.1.2	The overall limit exceeded ✓✓A	2A correct code description Accept: Owe supplier } Full marks Funds exhausted Code (870) only max one mark (2)	F L1
2.1.3	Dr Dhlamini ✓✓RT	2RT name (2)	F L1
2.1.4	Increased amount = $R736,90 \times \frac{6,3}{100} = R46,42$ ✓MA New price = $R46,42 + R736,90$ ✓MCA = R783,32 ✓CA OR ✓MA Increased percentage = $100\% + 6,3\% = 106,3\%$ New price = $R736,90 \times \frac{106,3}{100}$ ✓MCA = R783,32 ✓CA	1MA calculating 6,3% 1MCA adding the values 1CA simplification OR 1MA calculating 106,3% 1MCA multiplication 1CA simplification (3)	F L2

Ques	Solution	Explanation	T/L
2.1.5	$\begin{aligned} \text{Tax claimable} &= \text{R5 326,66} - \text{R445,10} \\ &= \text{R4 881,56} \end{aligned}$	AO 1RT correct values 1A Simplification (2)	F L2
2.1.6	$\text{Money the member must pay to the suppliers.}$	2O for correct definition Accept: Full Marks Amount of money not paid by the scheme. Money owed to the scheme. (2)	F L1
2.1.7	$\begin{aligned} \text{Total amount} &= \text{R173,03} + \text{R117,44} + \text{R61,50} + \text{R80,98} + \text{R46,80} \\ &= \text{R479,75} \end{aligned}$ OR $\begin{aligned} \text{Total amount} &= \text{R1 661,75} - \text{R736,90} - \text{R445,10} \\ &= \text{R479,75} \end{aligned}$	1RT all correct values 1M adding values OR 1RT all correct values 1M subtracting values (2)	F L1
2.2.1	Value Added Tax	2A acronym written out (2)	F L1
2.2.2	$\begin{aligned} \text{VAT} &= \text{R988,00} \times \frac{14\%}{114\%} \\ &= \text{R121,333333} \\ &\approx \text{R121,33} \end{aligned}$ OR $\begin{aligned} \text{VAT} &= \text{R988,00} \div 1,14 \times 0,14 \\ &= \text{R121,333333} \\ &\approx \text{R121,33} \end{aligned}$ OR $\begin{aligned} \text{VAT} &= \text{R988} - \left(\frac{\text{R988}}{1,14} \right) \\ &= \text{R988} - \text{R866,666..} \\ &\approx \text{R121,33} \end{aligned}$	1RT using correct value 1M multiplying by $\frac{14\%}{114\%}$ 1A Simplification OR 1RT using correct value 1M dividing by 1,14 and multiplying by 0,14 1A Simplification OR 1RT using correct value 1M dividing by 1,14 and subtracting 1A Simplification (3)	F L2

Ques	Solution	Explanation	T/L
2.2.3	Difference = R223 – R13 ✓M = R210 ✓A	AO 1M subtracting correct values 1A simplification Accept: –R210 full marks (2)	F L1
2.3.1	Exchange rate ✓✓RT R1 = 0,797782 Botswana pula OR ✓✓RT 1BWP = R1,253475	2RT correct exchange rate (2)	F L1
2.3.2	Rupee ✓A Dinar ✓A Yen ✓A	1A rupee 1A dinar 1A yen Accept: Currency values or name of country - max 2 marks (3)	L1 F
2.3.3 a	Cost price = ZAR 13 × 0,797782 ✓M = BWP 10,37 ✓A OR ✓M Cost price = 13 ZAR ÷ 1,253475 = BWP 10,37 ✓A	AO CA from Q2.3.1 if ratio listed 1M multiplying correct values 1A Simplification OR 1M dividing correct values 1A Simplification No penalty for unit (2)	F L2
2.3.3 b	Profit = (SP – CP) × number sold 7 526 = (48 – 10,37) × number sold ✓SF Number sold × 37,63 = 7 526 ✓CA Number sold = $\frac{7\,526}{37,63}$ ✓MCA = 200 ✓CA	CA from Q2.3.3a 1SF substitution 1CA simplification 1MCA dividing 1CA simplification (4)	F L3

Ques	Solution	Explanation	T/L
2.3.4	Number of shares $3+2=5$ ✓A Errol's share of the profit $= \frac{2}{5} \times \text{BWP } 7\,526$ ✓M $= \text{BWP } 3\,010,40$ ✓CA	AO 1A for calculating 5 1M multiplying correct values 1CA Errol's profit share No penalty for units (3)	F L2
2.3.5	Algerian dinar = $\frac{1}{9,546785}$ ✓A $= 0,104747$	1A numerator 1A denominator (2)	F L2
		[38]	

QUESTION 3 [21 MARKS]			
Ques	Solution	Explanation	T/L
3.1.1	Number of pallets = 12×2 ✓MA = 24 ✓A	AO 1MA multiply 12 by 2 1A simplification (2)	M L1
3.1.2	Height of the table ✓RT = $145\text{mm} + 145\text{mm} + 200\text{mm}$ ✓M = 490 mm ✓CA	1RT using correct values 1M adding correct values 1CA simplification Accept: adding 145 and 200 max 2 marks (3)	M L1
3.1.3	Area = length $\times$ width ✓RT = $1\,200\text{ mm} \times 1\,050\text{ mm}$ ✓SF = $1\,260\,000\text{ mm}^2$ ✓CA	1RT reading of correct values 1SF substituting correct values 1CA simplification (3)	M L2
3.1.4	Perimeter of glass top ✓RT ✓M = $1\,200\text{mm} + 1\,050\text{mm} + 1\,200\text{mm} + 1\,050\text{ mm}$ = $4\,500\text{ mm}$ ✓CA OR ✓M Perimeter = $2 \times (\text{length} + \text{width})$ = $2 \times (1\,200\text{ mm} + 1\,050\text{ mm})$ ✓SF = $2 \times 2\,250\text{ mm}$ = $4\,500\text{ mm}$ ✓CA	AO 1RT reading all correct values 1M adding correct values 1CA simplification OR 1M correct formula ($P = 2L + 2B$) 1SF substitution 1CA simplification (3)	M L1

Ques	Solution	Explanation	T/L
3.2.1	Length of ribbon $= \pi \times \text{diameter} + \text{overlap}$ $\checkmark C$ $= 3,142 \times 11\text{cm} + 2\text{cm} \checkmark SF$ $= 36,562 \text{ cm} \checkmark \checkmark CA$ OR Length of ribbon $= \pi \times \text{diameter} + \text{overlap}$ $= 3,142 \times 110 \text{ mm} + 20 \text{ mm} \checkmark SF$ $= 365,62 \text{ mm} \checkmark \checkmark CA$ $= 36,562 \text{ cm} \checkmark C$	1C converting diameter to 11 cm 1SF substituting in formula 2CA simplification OR 1SF substituting in formula 2CA simplification in mm 1C converting to cm Accept 37 cm full marks (4)	M L2
3.2.2 a	Inner diameter $= 110 - 5 - 5$ } $\checkmark MA$ Inner radius $= 100 \text{ mm} \div 2$ } $= 50 \text{ mm} \checkmark CA$ OR Inner radius $= 55\text{mm} - 5 \text{ mm} \checkmark MA$ $= 50 \text{ mm} \checkmark CA$	AO 1MA subtracting 5 twice and dividing by 2 1CA simplification OR 1MA subtracting 5 from the radius 1CA simplification (2)	M L1
3.2.2 b	Volume of cylinder $= \pi \times \text{radius}^2 \times \text{height}$ $\checkmark SF$ $= 3,142 \times (50\text{mm})^2 \times 48\text{mm} \checkmark A$ $\checkmark CA$ $= 377\,040\text{mm}^3 \checkmark A$	CA from Q3.2.2 a 1A for calculating 48 1SF substituting radius from Q3.2.2a 1CA simplification 1A for correct unit (4)	M L2
		[21]	

QUESTION 4 [25MARKS]			
Ques	Solution	Explanation	T/L
4.1.1	7 ✓✓RP	2RP correct store number Accept Shop number 9 full marks (2)	MP L1
4.1.2	Parking 2 ✓✓RP	2RP correct parking number Accept 2 full marks (2)	MP L1
4.1.3	Woolworths✓✓RP	2RP correct shop name Accept: Woolworths with additional shop maximum 1 mark (2)	MP L1
4.1.4	Turn right as you exit the Crazy Daisy Shop ✓A Turn righttowards Entrance 1 Turn lefttowards Entrance 2 ✓A Pass two shopsthen turn right ✓A Shop number 18 will be on your right ✓A OR Turn right as you exit the Crazy Daisy Shop ✓A Turn right towards Entrance 1 Continue straight towards Entrance 1 ✓A ✓A Turn left passing Checkers heading towards Entrance 4 Then turn left towards shop 18 ✓A	1A turn right 1A turn left 1A turn right 1A on your right OR 1A turn right 1A continue straight 1A turn left 1A turn left Accept: Using shops as landmarks (4)	MP L2

Ques	Solution	Explanation	T/L
4.1.5	27 doors ✓✓A	2A correct number of doors (2)	MP L2
4.1.6	$P_{(2 \text{ entrances})} = \frac{2}{23} / 0,087 / 8,7\%$ ✓A ✓A	1A numerator 1A denominator Accept: $\frac{3}{23}$ } Full Marks $\frac{3}{21}$ } Max 1 mark (2)	P L2
4.1.7	$P_{(\text{not an even number})} = \frac{12}{23} \checkmark A$ $\checkmark CA$	1A numerator 1CA denominator from Q4.1.6 Accept as CA from Q4.1.6 $\frac{11}{21}$ } Full Marks (2)	P L2

Ques	Solution	Explanation	T/L
4.2.1	Top view of the coffee shop. ✓✓A OR Top view of the shop without the roof. ✓✓A	2A explanation Accept: Aerial view without the roof Layout of a home from above (2)	MP L1
4.2.2	Bathroom OR Wash room OR Rest room ✓✓RP	2RP reading from plan Accept: Toilet, Cloak room, Ablution, Loo, Ladies, Gents (2)	MP L1
4.2.3	South-East / SE ✓✓RP	2RP reading from plan (2)	MP L1
4.2.4	70 mm : 15 m 70 : 15 000 ✓C 1 : 214,2857143 ✓S 1 : 214 ✓CA	1C convert to mm 1S simplification 1CA answer Accept 1 : 215 (3)	MP L3
		[25]	

QUESTION 5 [35 MARKS]			
Ques	Solution	Explanation	T/L
5.1.1	September ✓✓RT	2RT read from table Accept: Sep/Sept/ 9 th month full marks September and another month maximum 1 mark (2)	D L1
5.1.2	Mean income ✓RT $= \frac{(238+266+254+238+233+216+247+251+275+269+254+198)\text{million}}{12}$ $= \frac{2\,939\text{ million}}{12} \quad \checkmark M$ $= R244,9166667 \text{ million} / R244\,916\,666,7 \quad \checkmark CA$	1RT correct values 1M concept of mean 1CA answer in millions Omitted millions Max 2 marks (3)	D L2
5.1.3	✓RT $\frac{743}{12\,343} \times \frac{100}{1} \% \quad \checkmark M$ $= 6,02\% \quad \checkmark CA$	1RT correct values 1M multiply by 100 1CA simplify (3)	D L1
5.1.4	45 905 000 ✓✓RT OR 45 905 thousand ✓✓RT	2RT correct value from table 45 905 only max 1 mark (2)	D L1
5.1.5	✓RT Sixty five million one hundred and sixty eight thousand ✓A	1RT reading from table as is 1A correct wording with millions (2)	D L1
5.1.6	✓MA Median = $\frac{1015+1020}{2} \quad \checkmark M$ $= 1\,017,5 \text{ million} \quad \checkmark CA$	AO 1MA identifying correct middle values 1M concept of median 1CA simplification Penalty 1 for omitting millions (3)	D L2
5.1.7	$P_{(\text{less than } 200\,000\,000)} = \frac{1}{12} \quad \checkmark A$ $= 0,08333333 \quad \checkmark CA$	AO 1A numerator 1A denominator 1CA decimal form NPR (3)	P L2

Ques	Solution	Explanation	T/L
5.2.1	Total number of households for Grants: ✓M ✓MA = [2768– (1404+216+123+180+7+117+7)] thousand = 714 000 households ✓CA OR ✓M ✓MA (2768 – 1404 – 216 – 123 – 180 – 7 – 117 – 7) thousand = 714 000 households ✓CA	1M subtracting from 2 768 1MA adding values 1CA simplification OR 1M subtracting from 2 768 1MA continuous subtraction 1CA simplification (3)	D L1
5.2.2	Business ✓✓RG	2RG correct source (2)	D L1
5.2.3	Difference ✓RT =216 000 – 28 000 ✓M = 188 000 ✓A	AO 1RT correct values 1M subtracting 1A simplification Penalty 1 for omitting thousands (3)	D L1
5.2.4	Remittance ✓RT = $\frac{64\,000}{532\,000} \times \frac{100}{1} \%$ ✓M = 12,03% ✓CA	1RT correct values 1M percentage 1CA simplification $\frac{64}{532\,000} \times \frac{100}{1} \% = 0,012$ maximum 2 marks (3)	D L2
[35]			
TOTAL: 150 MARKS			