basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

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	✓RT 71,6%; 51%; 10,3%; 7,3%; 6,6% ✓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	✓RT Cost = 3,5 kℓ × R7,14 = R24,99 ✓A	1RTfor R7,14 1Asimplification 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	✓RT ✓A Cost price = R3 350 – R914 = R2 436	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 ✓M ✓A Peach =394 – 128 – (128 ÷ 2) = 394 – 192 = 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. Nov / Dec } Full 12 } marks 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 Funds exhausted } marks Code (870) only max one mark (2)	F L1
2.1.3	Dr Dhlamini ✓✓RT	2RT name (2)	F L1
2.1.4	$\text{Increased amount} = \text{R736,90} \times \dfrac{6,3}{100} \overset{\checkmark MA}{=} \text{R46,42}$ $\text{New price} = \text{R46,42} + \text{R736,90} \ \checkmark MCA$ $\qquad\qquad = \text{R783,32} \ \checkmark CA$ **OR** $\overset{\checkmark MA}{\text{Increased percentage} = 100\% + 6,3\% = 106,3\%}$ $\text{New price} = \text{R736,90} \times \dfrac{106,3}{100} \ \checkmark MCA$ $\qquad\qquad = \text{R783,32} \ \checkmark CA$	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	$\checkmark$RT Tax claimable = R5 326,66 − R445,10 = R4 881,56 $\checkmark$A	**AO** 1RT correct values 1A Simplification (2)	F L2
2.1.6	$\checkmark\checkmark$O 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	Total amount $\checkmark$RT $\checkmark$M =R173,03 + R117,44 + R61,50 +R80,98 + R46,80 = R479,75 **OR** Total amount $\checkmark$RT $\checkmark$M = R1 661,75 − R736,90 − R445,10 = R479,75	1RT all correct values 1M adding values **OR** 1RT all correct values 1M subtracting values (2)	F L1
2.2.1	Value Added Tax $\checkmark\checkmark$A	2A acronym written out (2)	F L1
2.2.2	$\checkmark$RT VAT = R988,00 × $\dfrac{14\%}{114\%}$ $\checkmark$M = R121,333333 ≈ R121,33 $\checkmark$A **OR** $\checkmark$RT VAT = R988,00 ÷1,14 × 0,14 $\checkmark$M = R121,333333 ≈ R121,33 $\checkmark$A **OR** $\checkmark$RT VAT = R988 − $\left(\dfrac{R988}{1,14}\right)$ $\checkmark$M = R988 − R866,666.. ≈ R121,33 $\checkmark$A	1RT using correct value 1M multiplying by $\dfrac{14\%}{114\%}$ 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 = $\dfrac{7\,526}{37,63}$ ✓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 $= \dfrac{2}{5} \times$ BWP 7 526 ✓M = 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 $= \dfrac{1 \;✓A}{9{,}546785}$ ✓A = 0,104747	1Anumerator 1Adenominator (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 =145mm + 145mm + 200mm ✓M = 490 mm ✓CA	1RT using correct values 1M adding correct values 1CAsimplification Accept: adding 145 and 200 max 2 marks (3)	M L1
3.1.3	Area = length × width ✓RT = 1 200 mm × 1050 mm ✓SF = 1 260 000 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 = 1200mm + 1050mm +1200mm + 1050 mm = 4 500 mm ✓CA **OR** ✓M Perimeter = 2 × (length + width) = 2 × (1 200 mm + 1 050 mm) ✓SF = 2 × 2 250 mm = 4 500 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 $= \pi \times$ diameter + overlap $\quad\quad\quad \checkmark$C $\quad\quad \checkmark$SF $= 3{,}142 \times 11$cm $+ 2$cm $= 36{,}562$ cm $\checkmark\checkmark$CA **OR** Length of ribbon $= \pi \times$ diameter + overlap $= 3{,}142 \times 110$ mm $+ 20$ mm $\checkmark$SF $= 365{,}62$ mm $\checkmark\checkmark$CA $= 36{,}562$ 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 $= 110 - 5 - 5$ $\Big\}$ $\checkmark$MA Inner radius $\;\;= 100$ mm $\div 2$ $\quad\quad\quad\quad\;\; = 50$ mm $\checkmark$CA **OR** Inner radius $= 55$mm $- 5$ mm $\checkmark$MA $\quad\quad\quad\quad = 50$ 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 $= \pi \times$ radius$^2 \times$ height $\quad\quad\quad \checkmark$SF $\quad\quad\quad \checkmark$A $= 3{,}142 \times (50$mm$)^2 \times 48$mm $\quad \checkmark$CA $= 377\,040$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 Turn left passing Checkers heading towards Entrance 4 ✓A 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	$$P_{(2\ entrances)} = \frac{✓A\ 2}{23}^{✓A} / 0,087 / 8,7\%$$	1A numerator 1A denominator Accept: $\frac{3}{23}$ } Full Marks $\frac{3}{21}$ } Max 1 mark (2)	P L2
4.1.7	$$P_{(not\ an\ even\ number)} = \frac{12^{✓A}}{23}^{✓CA}$$	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 ofthe 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/ 9th month full marks September and another month maximum 1 mark (2)	D L1
5.1.2	Mean income $$= \frac{\overset{\checkmark RT}{(238+266+254+238+233+216+247+251+275+269+254+198)\,million}}{12}$$ $$= \frac{2\,939\ million}{12}\quad \checkmark M$$ $$= R244{,}9166667\ million\ /\ R244\,916\,666{,}7\quad \checkmark CA$$	1RT correct values 1M concept of mean 1CA answer in millions Omitted millions Max 2 marks (3)	D L2
5.1.3	$$\frac{\overset{\checkmark RT}{743}}{12\,343}\times\frac{100}{1}\%\quad \checkmark M$$ $$= 6{,}02\%\quad \checkmark CA$$	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	Sixty five million one hundred and sixty eight thousand ✓A $\overset{\checkmark RT}{}$	1RT reading from table as is 1A correct wording with millions (2)	D L1
5.1.6	$$Median = \frac{\overset{\checkmark MA}{1015+1020}}{2}\quad \checkmark M$$ $$= 1\,017{,}5\ million\quad \checkmark CA$$	**AO** 1MA identifying correct middle values 1M concept of median 1CA simplification Penalty 1 for omitting millions (3)	D L2
5.1.7	$$P_{(less\ than\ 200\ 000\ 000)} = \frac{1}{12}\quad \begin{array}{c}\checkmark A\\ \checkmark A\end{array}$$ $$= 0{,}08333333\quad \checkmark CA$$	**AO** 1A numerator 1A denominator 1CA decimal form **NPR** (3)	P L2

Ques	Solution	Explanation	T/L
5.1.8	**COMPARISON BETWEEN INCOME FOR RAIL AND ROAD TRANSPORTATION** 1A for each correctly plotted bar × 6 If graph is drawn on top of other graph (full marks) Perfect line graph (3/6) (6)		D L2

Ques	Solution	Explanation	T/L
5.2.1	Total number of households for Grants: $\quad\;\;$✓M $\qquad\qquad$ ✓MA $= [2768– (1404+216+123+180+7+117+7)]$ thousand $=$ 714 000 households ✓CA **OR** $\;$✓M $\qquad\qquad\quad$ ✓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 $\hfill$(3)	D L1
5.2.2	Business ✓✓RG	2RG correct source $\hfill$(2)	D L1
5.2.3	Difference $\quad$✓RT $=216\,000 – 28\,000$ ✓M $=$ 188 000 ✓A	**AO** 1RT correct values 1M subtracting 1A simplification $\boxed{\begin{array}{l}\text{Penalty 1 for omitting}\\\text{thousands}\end{array}}$ $\hfill$(3)	D L1
5.2.4	Remittance $\quad$✓RT $=\dfrac{64\,000}{532\,000}\times\dfrac{100}{1}\%$ ✓M $= 12{,}03\%$ ✓CA	1RT correct values 1M percentage 1CA simplification $\boxed{\begin{array}{l}\dfrac{64}{532\,000}\times\dfrac{100}{1}\%=0{,}012\\[6pt]\text{maximum 2 marks}\end{array}}$ $\hfill$(3)	D L2
		[35]	
		TOTAL: 150 MARKS	