



# GAUTENG DEPARTMENT OF EDUCATION

## PREPARATORY EXAMINATION

### 2021

## MARKING GUIDELINES

### MATHEMATICAL LITERACY P1 (10601)

Codes	Explanation
M	Method
MA	Method with Accuracy
CA	Consistent Accuracy
A	Accuracy
C	Conversion
D	Define
J	Justification/Reason/Explain/Conclusion
S	Simplification
RT/RD/RG	Reading from a table OR a graph OR a diagram OR a map OR a plan
F	Choosing the correct formula
SF	Substitution in a formula
O	Opinion
P	Penalty, e.g. for no units, incorrect rounding-off, etc.
R	Rounding-off
NP	No penalty for rounding-off OR omitting units

#### KEY TO TOPIC SYMBOLS:

**F = Finance; M = Measurement; MP = Maps, Plans and other representations.  
DH = Data Handling; P = Probability**

## QUESTION 1

Q	ANSWER	EXPLANATION		LEVEL
1.1				
1.1.1	Multi-tank SA ✓✓ A	2 A Correct answer	(2)	F1
1.1.2	Unemployment Insurance Fund ✓✓ A	2A Correct answer	(2)	F1
1.1.3	✓MA $1\% \times R12\,790 = R127,90$ ✓A  <b>OR</b>  $\frac{1}{100} \times R12\,790$ ✓MA  $= R127,90$ ✓A	1 MA Multiplying by 1% 1 A Answer	(2)	F1
1.1.4	✓MA $R12\,790 \times \frac{100-40}{100} = R7\,674$ ✓A  <b>OR</b>  ✓MA $R12\,790 \times \frac{60}{100} = R7\,674$ ✓A  <b>OR</b>  $R12\,790 \times \frac{40}{100} = R5\,116$  $R12\,790 - R5\,116$ ✓MA $= R7\,674$ ✓A	1 MA Multiplying by 60% 1 A Correct answer   1 MA Multiplying by 60% 1 A Correct answer   1MA Subtracting the correct amount 1A Correct answer	(2)	F1

Q	ANSWER	EXPLANATION		LEVEL
1.1.5	He will have less money to spend. ✓✓J  <b>OR</b>  His buying power will be reduced.  <b>OR</b>  He will buy less goods/food/petrol.	2J Justification  <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">Accept any reasonable/ valid answer</div>	(2)	F1
1.1.6	✓MA $R21,50 \times \frac{100+20}{100} = R25,80$ ✓A  <b>OR</b>  ✓MA $R21,50 \times 1,2 = R25,80$ ✓A  <b>OR</b>  $R21,50 \times \frac{20}{100} = R4,30$  ✓MA $R21,50 + R4,30 = R25,80$ ✓A	1MA Multiplying by 120% 1A Answer   1MA Multiplying by 1,2 1A Answer   1MA Adding R4,30 1A Answer	(2)	F1
1.1.7	✓MA $400 \div 0,046 = R8\ 695,652$  $\approx R8\ 695,65$ ✓A  <b>OR</b>  $\frac{400}{0,046} = R\ 8\ 695,652$  $\approx R8\ 695,65$	1MA dividing by 0,046 1A Correct answer	(2)	F1
1.2				
1.2.1	Discrete data only consists of whole numbers and continuous data consists of decimal numbers as well. ✓✓O	2O Correct explanation of both discrete and continuous data.	(2)	DH1
1.2.2	Western Cape ✓✓A	2A Answer	(2)	DH1

Q	ANSWER	EXPLANATION		LEVEL
1.2.3	Range = Maximum value – Minimum value 44 143 – 63 ✓ RT = 44 080 ✓ A	2RT Correct values 1A Answer <b>Answer only, full marks</b>	(2)	DH1
1.2.4	205, 322, 362, 512, <b>1 177</b> , 3 959, 10 597, 12 193, 44 143 ✓ M Median = 1 177 ✓ CA	1M Arrangement 1CA Answer <b>Penalty: Penalise 1 mark if learner used all 10 provinces and got 844,5</b> <b>Answer only, full marks</b>	(2)	DH1
1.2.5	205 + 322 + 362 + 512 + 1 177 + 3 959 + 10 597 + 12 193 + 44 143 ✓ MA = 73 470 ✓ A	1MA Addition 1A Answer	(2)	DH1
1.3				
1.3.1	Males ✓✓ A	2A Answer	(2)	DH1
1.3.2	Bar Graph ✓✓ A	2A Answer	(2)	DH1
1.3.3	30 – 49 years old ✓✓ A	2A Answer	(2)	DH1
			<b>[30]</b>	

## QUESTION 2

Q	ANSWER	EXPLANATION		LEVEL
2.1				
2.1.1	It means that people 65 years and younger, receiving <b>an annual income of R83 100 or less, does not have to pay tax.</b> ✓✓J	2J Reason explaining less than R83 100 and does not have to pay tax	(2)	F4
2.1.2	<p>Income – pension – UIF = taxable income            ✓M ✓M</p> <p><math>R60\,000 - (7,5\% \times 60\,000) - R148,72</math>  <math>= R55\,351,28</math> ✓CA            ✓M</p> <p><math>R55\,351,28 \times 12 = R664\,215,36</math> ✓CA</p> <p><b>OR</b></p> <p>✓M</p> <p><math>R60\,000 \times 12 = R720\,000</math> ✓CA</p> <p><math>R720\,000 \times \frac{7,5}{100} = R54\,000</math></p> <p><math>R720\,000 - R54\,000 = R666\,000</math> ✓M</p> <p><math>R666\,000 - (R148,72 \times 12)</math>  <math>= R666\,000 - R1\,784,64</math> ✓M  <math>= R664\,215,36</math> ✓CA</p> <p><b>OR</b></p> <p>✓M</p> <p><math>R60\,000 \times 12 = R720\,000</math> ✓CA</p> <p><math>R720\,000 \times \frac{7,5}{100} = R54\,000</math></p> <p><math>R148,72 \times 12 = R1\,784,64</math></p> <p><math>R54\,000 + R1\,784,64 = R55\,784,64</math></p> <p><math>R720\,000 - R55\,784,64</math> ✓M✓M  <math>= R664\,215,36</math> ✓CA</p>	<p>1M Subtracting pension            1M Subtracting UIF            1CA Answer            1M Multiplying by 12            1CA Answer</p> <p>1M Multiplying by 12            1CA Answer            1M Subtracting pension            1M Subtracting UIF            1CA Answer</p> <p>1M Multiplying by 12            1CA Answer            1M Subtracting pension            1M Subtracting UIF            1CA Answer</p>	(5)	F3

Q	ANSWER	EXPLANATION		LEVEL																				
2.1.3	<p style="text-align: center;">✓MA  <math>(R319 \times 2) + (R215 \times 2) =</math>  R1 068 per month ✓A</p> <p style="text-align: center;">✓M  <math>R1\ 068 \times 12 = R12\ 816</math> per year ✓ CA</p> <p><b>OR</b></p> <p style="text-align: center;">✓MA  <math>(R319 + R319) + (R215 + R215)</math>  <math>= R638 + R430</math>  <math>= R1\ 068</math> ✓A</p> <p style="text-align: center;">✓M  <math>R1\ 068 \times 12 = R12\ 816</math> per year ✓ CA</p> <p><b>OR</b></p> <table style="border: none; margin-left: 20px;"> <tr> <td style="border: none;"><math>R319 \times 12 = R3\ 828</math></td> <td rowspan="2" style="border: none; padding-left: 10px;">}</td> <td rowspan="2" style="border: none; padding-left: 10px;">✓MA</td> </tr> <tr> <td style="border: none;"><math>R3\ 828 \times 2 = R7\ 656</math></td> </tr> <tr> <td style="border: none;"><math>R215 \times 12 = R2\ 580</math></td> <td rowspan="2" style="border: none; padding-left: 10px;">}</td> <td rowspan="2" style="border: none; padding-left: 10px;">✓A</td> </tr> <tr> <td style="border: none;"><math>R2\ 580 \times 2 = R5\ 160</math></td> </tr> </table> <p style="margin-left: 20px;"><math>R7\ 656 + R5\ 160</math> ✓M  <math>= R12\ 816</math> ✓CA</p> <p><b>OR</b></p> <table style="border: none; margin-left: 20px;"> <tr> <td style="border: none;"><math>R319 \times 2 = R638</math></td> <td rowspan="2" style="border: none; padding-left: 10px;">}</td> <td rowspan="2" style="border: none; padding-left: 10px;">✓MA</td> </tr> <tr> <td style="border: none;"><math>R638 \times 12 = R7\ 656</math></td> </tr> <tr> <td style="border: none;"><math>R215 \times 2 = R430</math></td> <td rowspan="2" style="border: none; padding-left: 10px;">}</td> <td rowspan="2" style="border: none; padding-left: 10px;">✓A</td> </tr> <tr> <td style="border: none;"><math>R430 \times 12 = R5\ 160</math></td> </tr> </table> <p style="margin-left: 20px;"><math>R7\ 656 + R5\ 160</math> ✓M  <math>= R12\ 816</math> ✓CA</p> <p><b>OR</b></p> <p><math>12 \times 2 = 24</math> ✓MA</p> <table style="border: none; margin-left: 20px;"> <tr> <td style="border: none;"><math>R319 \times 24 = R7\ 656</math></td> <td rowspan="2" style="border: none; padding-left: 10px;">}</td> <td rowspan="2" style="border: none; padding-left: 10px;">✓A</td> </tr> <tr> <td style="border: none;"><math>R215 \times 24 = R5\ 160</math></td> </tr> </table> <p style="margin-left: 20px;"><math>R7\ 656 + R5\ 160</math> ✓M  <math>= R12\ 816</math> ✓CA</p> <p><b>OR</b></p>	$R319 \times 12 = R3\ 828$	}	✓MA	$R3\ 828 \times 2 = R7\ 656$	$R215 \times 12 = R2\ 580$	}	✓A	$R2\ 580 \times 2 = R5\ 160$	$R319 \times 2 = R638$	}	✓MA	$R638 \times 12 = R7\ 656$	$R215 \times 2 = R430$	}	✓A	$R430 \times 12 = R5\ 160$	$R319 \times 24 = R7\ 656$	}	✓A	$R215 \times 24 = R5\ 160$	<p>1MA Addition and multiplication  1A Answer  1M Multiplying by 12  1CA Answer</p> <p>1MA Addition  A Answer  1M Multiplying by 12  1CA Answer</p> <p>1MA Multiplication by 12 and 2  1A Both answers  1M Addition  1CA Answer</p> <p>1MA Multiplication by 12 and 2  1A Both answers  1M Addition  1CA Answer</p> <p>1MA for 24  1A Both Answers  1M Addition  1CA Answer</p>		F2
$R319 \times 12 = R3\ 828$	}	✓MA																						
$R3\ 828 \times 2 = R7\ 656$																								
$R215 \times 12 = R2\ 580$	}	✓A																						
$R2\ 580 \times 2 = R5\ 160$																								
$R319 \times 2 = R638$	}	✓MA																						
$R638 \times 12 = R7\ 656$																								
$R215 \times 2 = R430$	}	✓A																						
$R430 \times 12 = R5\ 160$																								
$R319 \times 24 = R7\ 656$	}	✓A																						
$R215 \times 24 = R5\ 160$																								

	$12 \times 2 = 24$ ✓MA R319 + R215 ✓A $= R534 \times 24$ ✓M $= R12\,816$ ✓CA	1MA for 24 1A Total or 1M Addition of both values 1M Multiplying by 24 1CA Answer	(4)	
2.1.4	$R155\,505 + 39\% (R664\,215,36 - R584\,200)$ ✓RT ✓SF $= R155\,505 + (39\% \times R80\,015,36)$ $= R155\,505 + R31\,205,99$ $= R186\,710,99$ ✓CA ✓M $R186\,710,99 - R14\,958 = R171\,752,99$ ✓M $R171\,752,99 - R12\,816 = R158\,936,99$ ✓M $R158\,936,99 \div 12 = R13\,244,75$ ✓CA No, her claim is NOT VALID. ✓J	<b>CA from Q 2.1.2 and Q 2.1.3</b> 1RT Correct tax bracket 1SF Substitute into formula 1CA Answer 1M Subtract rebate 1M Subtract medical tax credits 1M Division by 12 1CA Answer 1J Opinion/Conclusion		F4

<p><b>OR</b></p> <p><b>Annual Tax payable:</b></p> <p style="text-align: center;">✓RT</p> <p>R155 505 + 39% of income above R584 200</p> <p>R155 505 + 39% × (R664 215,36 – R584 200)</p> <p style="text-align: center;">✓SF</p> <p>= R155 505 + <math>\left(\frac{39}{100} \times R80\ 015,36\right)</math></p> <p>= R155 505 + R312 065,99</p> <p>= R186 710,99 ✓CA</p> <p><b>Rebate:</b></p> <p style="text-align: center;">✓M</p> <p>R186 710,99 – R14 958 = R171 752,99</p> <p><b>Medical Tax credits:</b></p> <p style="text-align: center;">✓M</p> <p>R171 752,99 – R12 816 = R158 936,99</p> <p><b>Monthly Tax payable:</b></p> <p><math>\frac{R158\ 936,99}{12}</math> ✓M</p> <p>= R13 244,75 ✓CA</p> <p>No, her claim is NOT VALID. ✓J</p>	<p>1RT Correct tax bracket</p> <p>1SF Substitute in formula</p> <p>1CA Answer</p> <p>1M Subtract rebate</p> <p>1M Subtract medical tax credits</p> <p>1M Division by 12</p> <p>1CA Answer</p> <p>1J Opinion</p>
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**OR****Annual Tax payable:**

$$\begin{aligned} & \checkmark \text{RT} \\ & \text{R155 505} + 39\% \text{ of income above R584 200} \\ & \text{R155 505} + 39\% \times (\text{R664 215,36} - \text{R584 200}) \end{aligned}$$

$$\begin{aligned} & \checkmark \text{SF} \\ & = \text{R155 505} + \left( \frac{39}{100} \times \text{R80 015,36} \right) \\ & = \text{R155 505} + \text{R312 065,99} \\ & = \text{R186 710,99} \quad \checkmark \text{CA} \end{aligned}$$

**Rebate and medical tax credits:**

$$\begin{aligned} & \checkmark \text{M} \quad \checkmark \text{M} \\ & \text{R186 710,99} - \text{R14 958} - \text{R12 816} \\ & = \text{R158 936,99} \end{aligned}$$

**Monthly Tax payable:**

$$\frac{\text{R158 936,99}}{12} \quad \checkmark \text{M}$$

$$= \text{R13 244,75} \quad \checkmark \text{CA}$$

No, her claim is NOT VALID.  $\checkmark \text{J}$ 

1RT Correct tax bracket  
 1SF Substitute in formula  
 1CA Answer  
 1M Subtract rebate  
 1M Subtract medical tax credits  
 1M Division by 12  
 1CA Answer  
 1J Opinion

	<b>OR</b>			
	<p><b>Annual Tax payable:</b></p> <p style="text-align: center;">✓RT</p> <p>R155 505 + 39% of income above R584 200</p> <p>R155 505 + 39% × (R664 215,36 – R584 200)</p> <p style="text-align: center;">✓SF</p> <p>= R155 505 + <math>\left(\frac{39}{100} \times R80\ 015,36\right)</math></p> <p>= R155 505 + R312 065,99</p> <p>= R186 710,99 ✓CA</p> <p><b>Rebate:</b></p> <p style="text-align: center;">✓M</p> <p>R186 710,99 – R14 958 = R171 752,99</p> <p><b>Monthly tax before medical tax deductions:</b></p> <p><math>\frac{R171\ 752,99}{12}</math> ✓M</p> <p>= R14 312,75</p> <p><b>Medical tax credits:</b></p> <p>R14 312,75 – (2 × R319) – (2 × R215)</p> <p>= R14 312,75 – R638 – R430</p> <p>= R14 312,75 – R1 068 ✓M</p> <p>= R13 244,75 ✓CA</p> <p>No, her claim is NOT VALID ✓J</p>	<p>RT Correct tax bracket</p> <p>1SF Substitute in formula</p> <p>1CA Answer</p> <p>1M Subtract rebate</p> <p>1M Division by 12</p> <p>1M Subtract medical tax credits</p> <p>1CA Answer</p> <p>1J Opinion</p>		
			(8)	
2.2				
2.2.1	<p style="text-align: center;">✓RT      ✓M</p> <p>R92 400 – R37 700 = R54 700 ✓CA</p>	<p>1RT Correct values from table</p> <p>1M subtraction/concept of difference</p> <p>1CA answer</p>	(3)	F1

Q	ANSWER	EXPLANATION		LEVEL
2.2.2	<p>✓MA  <math>12 \times R20\,725</math>  <math>= R248\,700</math> ✓A</p> <p>Private High School in 2025 ✓RT</p> <p><b>OR</b></p> <p>2020: <math>R148\,300 \div 12 = R12\,358,33</math>  ✓MA  2025: <math>R248\,700 \div 12 = R20\,725</math> ✓A</p> <p>Private High School in 2025 ✓RT</p>	<p>1MA Multiplying by 12  1A Answer  1RT Reading year from table</p> <p>1MA Division by 12  1A Answer  1RT Reading year from table</p>	(3)	F1
2.2.3	<p><b>Year 1 (2022)</b></p> <p>✓MA  <math>R88\,635,77 + (R88\,635,77 \times 6,6\%)</math>  <math>= R94\,485,73</math> ✓A</p> <p><b>Year 2 (2023)</b></p> <p><math>R94\,485,73 + (R94\,485,73 \times 6,6\%)</math>  <math>= R100\,721,79</math> ✓CA</p> <p><b>Year 3 (2024)</b></p> <p><math>R100\,721,79 + (R100\,721,79 \times 6,6\%)</math>  <math>= R107\,369,43</math> ✓CA</p> <p>University fees for 2025 – savings = shortfall  ✓RT  <math>R107\,600 - R107\,369,43 = R230,57</math> ✓CA</p> <p>Joshua is correct, R250 would cover the shortfall ✓O</p> <p><b>OR</b></p> <p>Joshua is incorrect, the amount is less than R250</p> <p><b>OR</b></p>	<p>1MA Multiplying by 6,6%  1A Answer for 1<sup>st</sup> year  1CA Answer for 2<sup>nd</sup> year  1CA Answer for 3<sup>rd</sup> year  1RT Reading University fees from table for 2025  1CA Difference  1O Opinion</p> <p><i>NOTE: If Compound interest formula was used:  Award FULL MARKS, given that the answer is 100% correct.  NO marks if answer is incorrect.</i></p>		F4

<p><b>Year 1 (2022)</b>  <math>R88\ 653,77 \times \frac{6,6}{100} = R5\ 851,14882</math> ✓MA  ✓A  <math>R88\ 653,77 + R5\ 851,14882 = R94\ 504,91882</math></p> <p><b>Year 2 (2023)</b>  <math>R94\ 504,91882 \times \frac{6,6}{100} = R6\ 237,324642</math>  <math>R94\ 504,91882 + R6\ 237,324642</math>  <math>= R100\ 742,2435</math> ✓CA</p> <p><b>Year 3 (2024)</b>  <math>R100\ 742,2435 \times \frac{6,6}{100} = R6\ 648,988068</math>  <math>R100\ 742,2435 + R6\ 648,988068</math>  <math>= R107\ 391,2316</math>  <math>= R107\ 391,23</math> ✓CA</p> <p><b>Difference:</b>  ✓RT  <math>R107\ 600 - R107\ 391,23 = R208,77</math> ✓CA</p> <p>Joshua is correct, R250 would cover the shortfall ✓O</p> <p><b>OR</b></p> <p>Joshua is incorrect, the amount is less than R250</p> <p><b>OR</b></p> <p><b>Year 1 (2022)</b>  ✓MA  <math>R88\ 653,77 \times 1,066 = R94\ 504,91882</math> ✓A</p> <p><b>Year 2 (2023)</b>  <math>R94\ 504,91882 \times 1,066 = R100\ 742,2435</math>  ✓CA</p> <p><b>Year 3 (2024)</b>  <math>R100\ 742,2435 \times 1,066 = R107\ 391,23</math> ✓CA</p> <p><b>Difference:</b>  ✓RT  <math>R107\ 600 - R107\ 391,23 = R208,77</math> ✓CA</p> <p>Joshua is correct, R250 would cover the shortfall ✓O</p> <p><b>OR</b></p> <p>Joshua is incorrect, the amount is less than R250</p>	<p>1MA Multiplying by 6,6%  1A Answer for 1<sup>st</sup> year  1CA Answer for 2<sup>nd</sup> year  1CA Answer for 3<sup>rd</sup> year  1RT Reading University fees from table for 2025  1CA Difference  1O Opinion</p> <p>1MA Multiplying by 1,066  1A Answer for 1<sup>st</sup> year  1CA Answer for 2<sup>nd</sup> year  1CA Answer for 3<sup>rd</sup> year  1RT Reading University fees from table for 2025  1CA Difference  1O Opinion</p>		
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Q	ANSWER	EXPLANATION		LEVEL
2.3				
2.3.1	R200,00 ✓✓RT	2RT Reading from table	(2)	F1
2.3.2	<p>Conversion to rand:</p> $\frac{69,36}{100} = R0,6936$ $\frac{81,60}{100} = R0,8160$ <p style="text-align: right;">} ✓C</p> <p>First 50 kWh  <math>50 \times R0,6936 = R34,68</math> ✓A</p> <p>286 kWh – 50 kWh = 236 kWh ✓A</p> <p>Next 236 kWh  <math>236 \times R0,8160 = R192,576</math> ✓CA</p> <p>Total:  <math>R34,68 + R192,576 = R227,256</math>  <math>= R227,26</math> ✓CA</p> <p><b>OR</b></p> <p>First 50 kWh  <math>50 \times 69,36 = 3\,468c</math> ✓A</p> <p>286 kWh – 50 kWh = 236 kWh ✓A</p> <p>Next 236 kWh  <math>236 \times 81,60 = 19\,257,6c</math> ✓CA</p> <p>Total:  <math>3\,468 + 19\,257,6 = 22\,725,6c</math> ✓CA</p> <p>Conversion to rand:  ✓C  <math>\frac{22\,725,6}{100} = R227,256</math>  <math>= R227,26</math></p>	<p>1C Conversion to rand  1A Answer for 50 kWh  1A Difference  1CA Answer  1CA Total</p> <p>1A Answer for 50 kWh in cents  1A Difference  1CA Answer  1CA Total  1C Conversion to rand</p>		F3
			(5)	

Q	ANSWER	EXPLANATION		LEVEL
2.3.3	<p>Cost excluding VAT:  <math>\checkmark</math>MA  <math>R720 \times \frac{100}{115} = R626,0869565 \checkmark</math>A</p> <p><b>OR</b></p> <p><math>\checkmark</math>MA  <math>\frac{R720}{1,15} = R626,0869565 \checkmark</math>A</p> <p>Cost excluding fixed monthly fee:  <math>R626,0869565 - R200 = R426,0869565 \checkmark</math>CA</p> <p>Cost per unit in Rand:  <math>\frac{70,855}{100} = R0,70855 \checkmark</math>C</p> <p>kWh used:  <math>\frac{R426,0869565}{R0,70855} = 601,3505843</math>  <math>= 601,35 \text{ kWh used } \checkmark</math>CA</p>	<p>1MA for VAT exclusive method  1A Answer  1CA Cost excluding fixed monthly fee  1C Conversion  1CA Answer</p>	(5)	F2
				<b>[44]</b>

QUESTION 3

Q	ANSWER	EXPLANATION		LEVEL
3.1				
3.1.1	Range = Maximum – Minimum ✓M = 78,2% - 60,6% ✓ MA = 17,6% ✓ A	1M Range concept 1MA Correct values in correct order 1A Answer	(3)	DH2
3.1.2	Bi-modal = 70,2% ✓A and 78,2% ✓A	2A Correct Answers	(2)	DH2
3.1.3	Arrangement of values: 60,6 ; 67,8 ; 70,2 ; 70,2 ; 72,5 ; 73,9 ; 75,1 ; 75,8 ; 78,2 ; 78,2 ✓MA  Median = $\frac{72,5 + 73,9}{2}$ ✓MA  = $\frac{146,4}{2}$  = 73,2 ✓ CA	1MA Correct arrangement 1MA Correct values divided by 2 1CA Answer	(3)	DH3
3.1.4	Continuous ✓A The data consists of decimal numbers. ✓✓J  <b>OR</b>  Continuous ✓A The data can be measured ✓✓J	1A Continuous 2J Correct definition	(3)	DH4
3.1.5	IQR = Q3 – Q1  Q3 = 75,8% Q1 = 70,2%  ✓A IQR = 75,8% - 70,2% ✓M = 5,6% ✓ CA	1A Correct Quartile 1 and 3 values 1M IQR method/concept 1CA Answer	(3)	DH3
3.1.6	The third Quartile value (Q3) represents 75% of the data collected. ✓✓ J  <b>OR</b>  The third Quartile value (Q3) represents $\frac{3}{4}$ of the data collected. ✓✓ J	2J Explanation of Q3, must include 75%  <div style="border: 1px solid black; padding: 5px; display: inline-block;"><b>Accept any reasonable/valid explanation including 75%</b></div>	(2)	DH4
3.1.7	Probability = $\frac{4}{10}$ ✓✓MA  = $\frac{2}{5}$ ✓S	1MA Denominator 1MA Numerator 1S Simplification	(3)	P2

Q	ANSWER	EXPLANATION		LEVEL
3.2				
3.2.1	<p><b>Ordinary pass rate:</b> The pass rate dropped/decreased/fell from 2015 to 2016 and then increased/went up/went higher from 2016 to 2018. ✓✓J</p> <p><b>University pass rate:</b> There is a continuous increase from 2015 to 2018. ✓✓J</p> <p><b>OR</b></p> <p><b>University pass rate:</b> There is an increase from 2015 to 2016, and another increase from 2016 – 2017 and another increase from 2017 – 2018 ✓✓J</p>	<p>2J Explanation of the trend of ordinary pass rate</p> <p>2J Explanation of the trend of university pass rate</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p><b>Penalise learner if years are not used</b></p> </div>	(4)	DH4
3.2.2	<p>Biased ✓A The data was only collected from one province instead of all the provinces. ✓J</p> <p><b>OR</b></p> <p>Biased ✓A The data was only collected from a small part of the country. ✓J</p> <p><b>OR</b></p> <p>Biased ✓A The data does not represent the whole country, only one part. ✓J</p>	<p>1A Biased 1J Explanation</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p><b>Accept any valid/reasonable answer referring to the entire country or only part of the country</b></p> </div>	(2)	DH4
3.2.3	<p>Survey questions:</p> <ol style="list-style-type: none"> <li>1. Did you attend school every day?</li> <li>2. How long before the exams did you start studying?</li> <li>3. Did you study every day?</li> <li>4. What are you going to study next year?</li> <li>5. What or who influenced your choice to study further?</li> <li>6. Who will finance your studies?</li> <li>7. Will you get a part-time job to help pay for your studies?</li> <li>8. How did COVID-19 influence your approach to school and your studies?</li> <li>9. Did any of your parents attend university?</li> </ol>	<p>4O Four questions asked relating to the University pass rate</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p><b>9 Possible options are given – mark only the first four answers; any relevant/valid questions relating to a learner who achieved a university entrance can be accepted.</b></p> </div>	(4)	DH4
			[29]	



## QUESTION 4

Q	ANSWER	EXPLANATION		LEVEL
4.1				
4.1.1	<p>3 days in Jan + 28 days in Feb + 31 days in March ✓MA</p> <p>= 62 days ✓CA</p> <p>✓M</p> $\frac{\$1\,348\,258\,224}{62} = \$21\,746\,100,39$ <p>≈ \$22 000 000 ✓R</p>	<p>1MA Mark for adding</p> <p>1CA for Answer</p> <p>1M for Dividing by days</p> <p>1R Rounding to the nearest million</p>	(4)	F3
4.1.2	<p><math>62 \text{ days} \times 60 \text{ tickets} \times \\$76 = \\$282\,720</math></p> <p>✓M ✓MA ✓CA</p> <p><b>OR</b></p> <p><math>60 \text{ tickets} \times \\$76 = \\$4\,560 \text{ per day}</math> ✓MA</p> <p>✓M</p> <p><math>\\$4\,560 \times 62 \text{ days} = \\$282\,720</math> ✓CA</p> <p><b>OR</b></p> <p><math>62 \text{ days} \times \\$76 = \\$4\,712</math> ✓M</p> <p>✓MA</p> <p><math>\\$4\,712 \times 60 \text{ tickets} = \\$282\,720</math> ✓CA</p>	<p>1M Multiplying tickets by days (<b>CA from 4.1.1.</b>)</p> <p>1MA Multiplying tickets by \$76</p> <p>1CA Mark for answer</p> <p>1MA Multiplying tickets by \$76</p> <p>1M Multiplying with days (<b>CA from 4.1.1.</b>)</p> <p>1CA Answer</p> <p>1M Multiplying days by \$76 (<b>CA from 4.1.1.</b>)</p> <p>1MA Multiplying amount by 60</p> <p>1CA Answer</p>	(3)	F2
4.1.3	<p>✓M</p> <p><math>\\$282\,720 \times 11,8321</math></p> <p>= R3 345171,312 ✓CA</p>	<p>(<b>CA from 4.1.2.</b>)</p> <p>1M Multiply by 11,8321</p> <p>1CA Mark for answer</p>	(2)	F1

Q	ANSWER	EXPLANATION		LEVEL
4.1.4	$60 \times R120 = R7\ 200$ <i>total income</i> ✓MA $40\% \times R7\ 200 = R2\ 880$ <i>lockdown income</i> ✓CA  ✓M $R7\ 200 - R2\ 880 = R4\ 320$ loss  <b>OR</b> $60 \text{ people} \times \frac{40}{100}$ $= 24 \text{ people allowed to attend daily}$ ✓CA $24 \text{ people} \times R120 = R2\ 880$  $\text{Total} = 60 \text{ people} \times R120 = R7\ 200$ ✓CA ✓M $\text{Loss} = R7\ 200 - R2\ 880 = R4\ 320$ loss	1MA Total income per day 1CA Calculating 40% of total income 1M Subtracting difference   1MA Calculating number of people attending daily 1CA Calculating total income per day 1M Subtracting difference	(3)	F2
4.2				
4.2.1	R200 ✓✓A	2A Marks for answer	(2)	F1
4.2.2	Minimum fee of R30 when you make a deposit ✓✓A  <b>OR</b> When you make a deposit at FNB bank  <b>OR</b> When you make a deposit of less than R5 000  <b>OR</b> When you make a deposit of R5 000 or less  <b>OR</b> Minimum fee when you make a deposit of less than R5 000  <b>OR</b> When you make a deposit at FNB of less than R5 000	2A Marks for answer	(2)	F2

Q	ANSWER	EXPLANATION		LEVEL
4.2.3	$R8,40 + \left( R1,49 \times \frac{R11\ 300}{100} \right) \checkmark MA$ $= R8,40 + R168,37$ $= R176,77 \checkmark CA$ <p><b>OR</b></p> $\frac{R11\ 300}{100} = 113$ $113 \times R1,49 = R168,37 \checkmark MA$ $R8,40 + R168,37 = R176,77 \checkmark CA$	<p>1MA Multiplication by R11 300 and R1,49 1CA Mark for answer</p> <p>1MA Multiplying 113 by R1,49 1CA Answer</p>	(2)	F2
4.2.4 (a)	$\checkmark MA$ $\frac{2,4\%}{12} \checkmark A = 0,2\% \checkmark CA$ <p><b>OR</b></p> $\frac{2,4}{100} = 0,024 \checkmark MA$ $\frac{0,024}{12} \checkmark A$ $= 0,002 \checkmark CA$	<p>1MA Correct percentage 1A Mark for dividing by 12 1CA Mark for answer</p> <p>1MA Calculating decimal 1A Division by 12 1CA Answer</p>	(3)	F1

Q	ANSWER	EXPLANATION		LEVEL
4.2.4 (b)	<p>Month 1 ✓M <math>R11\ 300 \times 0,002 = R22,60</math> ✓CA <math>R11\ 300 + R22,60 = R11\ 322,60</math> ✓CA</p> <p>Month 2 <math>R11\ 322,60 \times 0,002 = R22,6452</math> ✓CA <math>R22,60 + R22,65 = R45,25</math> ✓CA</p> <p><b>OR</b></p> <p>Maand 1 ✓M <math>R11\ 300 \times \frac{0,2}{100} = R22,60</math> ✓CA <math>R11\ 300 + R22,60 = R11\ 322,60</math> ✓CA</p> <p>Month 2 <math>R11\ 322,60 \times \frac{0,2}{100} = R22,6452</math> ✓CA <math>R22,60 + R22,65 = R45,25</math> ✓CA</p>	<p><b>CA from 4.2.2</b> 1M Multiplication by decimal 1CA Interest for 1st month 1CA Total interest for 1st month 1CA Interest for 2nd month 1CA Total interest</p> <p><b>CA from 4.2.2</b> 1M Multiplying by 0,2% 1CA Interest for 1st month 1CA Total interest for first month 1CA Interest for 2nd month 1CA Total interest</p> <p><i>NOTE: If compound interest formula was used: Award FULL MARKS, given that the answer is 100% correct. NO marks if answer is incorrect.</i></p>	(5)	F3
4.3				
4.3.1	<p>✓M <math>R40\ 000 \div 300 = R133,33 \dots</math> ✓CA <math>\approx R130,00</math> income per person ✓R</p> <p><b>OR</b></p> <p><math>\frac{R40\ 000}{300}</math> ✓M <math>= R133,3333333\dots</math> ✓CA <math>\approx R130</math> ✓R</p>	<p>1M Division by 300 1CA Answer 1R Rounding</p> <p>1M Division by 300 1CA Answer 1R Rounding</p>	(3)	F2

Q	ANSWER	EXPLANATION		LEVEL
4.3.2	$\begin{aligned} & \checkmark \text{RT} \\ & (R40\,000 - R30\,000) \div 500 \quad \checkmark \text{M} \\ & \quad \checkmark \text{MA} \\ & = R20 \text{ cost per person} \quad \checkmark \text{CA} \end{aligned}$ <p><b>OR</b></p> $\frac{R40\,000 - R30\,000}{500}$ $= \frac{\checkmark \checkmark \text{MA}}{\checkmark \text{M}} \frac{R10\,000}{500}$ $= R20 \text{ per person} \quad \checkmark \text{CA}$	<p>1 RT Mark for the fixed expenses (R30 000)  1MA Mark for subtracting 1M for Dividing by 500  1 CA Mark for cost per person</p> <p>2MA Calculating difference between total expense and fixed cost  1M Dividing by 500  1CA Answer</p>	(4)	F2
4.3.3	$\begin{aligned} & \checkmark \text{M} \\ & \frac{R130 - R20}{R20} \times 100 = 550\% \quad \checkmark \text{CA} \\ & \quad \checkmark \text{M} \end{aligned}$ <p><b>OR</b></p> $\frac{R130 - R20}{R20} \times 100$ $= \frac{\checkmark \text{M}}{\checkmark \text{M}} \frac{R110}{R20} \times 100$ $= 550\% \quad \checkmark \text{CA}$	<p><b>CA from 4.3.2</b>  1M Difference between amounts  1M Division  1CA Percentage</p> <p>1M Difference  1M Division  1CA Percentage</p>	(3)	F2

Q	ANSWER	EXPLANATION		LEVEL
4.4				
4.4.1	<b>Grade 11s from 2014 – 2019:</b> ✓MA 827 677, 864 618, <u>858 769</u> , 869 513, 890 971  <b>Grade 12s from 2014 – 2019:</b> ✓MA 501 303, 512 735, <u>534 484</u> , 610 178, 644 536	1MA Correct order of grade 11s  1MA Correct order of grade 12s	(2)	DH 2
4.4.2	Median = 534 484  Quartile 3 (Q3) = $\frac{644\,536 + 610\,178}{2}$  $= \frac{1\,254\,714}{2}$  = 627 357 ✓A  Quartile 1 (Q1) = $\frac{501\,303 + 512\,735}{2}$  $= \frac{1\,014\,038}{2}$  = 507 019 ✓A  IQR = Q3 – Q1  = 627 357 – 507 019 ✓M  = 120 338 ✓CA	1A Q3 1A Q1 1M Concept of IQR 1CA Answer  <div style="border: 1px solid black; padding: 5px;"> <p><b>If range is used, no marks. CA only if other values are used and the concept IQR is used.</b></p> </div>	(4)	DH3
4.4.3	None ✓✓A No mode	2A Answer	(2)	DH 1
4.4.4	Mean = $\frac{\text{Total}}{5}$  Mean = $\frac{501\,303 + 512\,735 + 534\,484 + 610\,178 + 644\,536}{5}$ ✓MA ✓MA  $= \frac{2\,803\,236}{5}$  = 560 647,2 ✓CA	1MA Addition or total 1MA Division by 5 1CA Answer	(3)	DH2
			[47]	
				<b>TOTAL: 150</b>