NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2022

MATHEMATICAL LITERACY: PAPER II

MARKING GUIDELINES

Time: 3 hours 150 marks

These marking guidelines are prepared for use by examiners and sub-examiners, all of whom are required to attend a standardisation meeting to ensure that the guidelines are consistently interpreted and applied in the marking of candidates' scripts.

The IEB will not enter any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there may be different interpretations of the application of the marking guidelines.

QUESTION 1

Q Nr	Marking Guideline	Level
1.1	2022 – 1959 = 63 years old	1
1.2	30,5 cm ÷ 12 inches = 2,54 cm/inch	1
1.3.1	One hundred and fifty-one million	1
1.3.2	41 944 hours and 26 minutes **OR** 41 944 hours and 27 minutes **OR** Typo on question paper: '151 000 000 minutes …' should read 'seconds', hence accept: 151 000 000 ÷ 60 = 2 516 666,67 hours = 2 516 666 hrs 40 minutes	1
1.4.1	3	1
1.4.2	94 cm – 2 × 5 = 84 cm	1
1.5.1	R150	1
1.5.2	R150,00 × $0,066 = $9,90	1
1.5.3	320 ÷ 10 = 32 cm	1
1.5.4	B	1
1.5.5	0,07 × 1 258 = 88,06 cm² **Accept** 88 cm²	1
1.5.6	1 258 × 10² = 125 800 mm²	1
1.5.7	C	1
1.6	5 cm – 1,5 cm = 3,5 cm 4,8 cm – 3,5 cm = 1,3 cm **OR** 1,5 cm + 4,8 cm = 6,3 cm 6,3 cm – 5 cm = 1,3 cm	1
1.7	B	1

QUESTION 2

<table>
<tr><th>Q Nr</th><th>Marking Guideline</th><th>Level</th></tr>
<tr><td>2.1.1</td><td>B</td><td>4</td></tr>
<tr><td>2.1.2</td><td>50 ml ÷ 4 × 7
= 87,5 ml ACCEPT 88 ml</td><td>2</td></tr>
<tr><td>2.1.3</td><td>0,12 × 50
= 6 minutes
50 + 6
= 56 minutes</td><td>2</td></tr>
<tr><td>2.2.1</td><td>54 m ÷ 550
= 0,098 m
= 9,8 cm
OR
5 400 ÷ 550
= 9,8 cm</td><td>2</td></tr>
<tr><td>2.2.2</td><td>300 000 000 ÷ 24 600
=12 195,12 hours
12 195,12 ÷ 24
= 508,13 days
508,13 ÷ 30
= 16,94
= 17 months</td><td>3</td></tr>
<tr><td>2.2.3</td><td>24 600 × 1,609344
= 39 589,86 km/h ACCEPT 39 589,9 OR 39 590</td><td>2</td></tr>
<tr><td>2.2.4</td><td>–4 = 1,8^{0}C +32
–4 – 32 = 1,8°C
–36 = 1,8°C
°C = –36 ÷ 1,8
°C = –20^{0}C (max temp)

–20°C – (–72,2^{0}C)
= -20^{0}C + 72,2^{0}C
= 52,2^{0}C
∴ John is correct
OR
–72,2 + 52,2
= –20ºC

1,8 x (–20) + 32
= – 4ºC
∴ John is correct</td><td>4</td></tr>
<tr><td>2.2.5</td><td>142 000 000 – 51 000 000
= 91 000 000 or
= 91 million</td><td>2</td></tr>
<tr><td>2.3</td><td><table><tr><th>COLUMN A</th><th>COLUMN B</th></tr><tr><td>2.3.1</td><td>C</td></tr><tr><td>2.3.2</td><td>F</td></tr><tr><td>2.3.3</td><td>E</td></tr><tr><td>2.3.4</td><td>B</td></tr><tr><td>2.3.5</td><td>A</td></tr><tr><td>2.3.6</td><td>D</td></tr></table></td><td>4</td></tr>
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QUESTION 3

Q Nr	Marking Guideline	Level
3.1.1	P = 2 (90 + 120) × 5 P = 420 × 5 P = 2 100 m P = 2,1 km **OR** P = 2(0,09 + 0,12) × 5 P = 0,42 x 5 P = 2,1 km	2
3.1.2	40,3 – (5,5 + 5,5) = 29,3 m	2
3.1.3	$A_{RECTANGLE}$ = 120 × 90 = 10 800 m² A_{CIRCLE} = 3,142 × 9,15² = 263,06 m² **ACCEPT** 262,89 **OR** 263,02 **OR** 263 263,02 ÷ 10 800 × 100% = 2,4 %	3
3.1.4	i r = 7 ÷ 2 =3,5 V = 3,142 × 3,5² × 28,575 V = 1 099,8374625 cm^3 = 1 099,8374625 ml = 1,1 litre	2
	ii 28,575 × 1,13 = 32,28975 = 32 cm	3
3.1.5	35° Allow for $\pm$ 1°	1
3.2.1	$\frac{1}{5} \times 100 = 20\%$ 100% – 20% – 20% – 40% = 20% of the stadium **OR** 40 ÷ 100 = $\frac{2}{5}$ 20 ÷ 100 = $\frac{1}{5}$ $1 - \frac{1}{5} - \frac{2}{5} - \frac{1}{5} = \frac{1}{5}$ $\frac{1}{5} \times 100 = 20\%$ **OR** 0,4 × 53 394 = 21 357,6 0,2 × 53 394 = 10 678,8 $\frac{1}{5}$ × 53 394 = 10 678,8 21 357,6 + 10 678,8 × 2 = 42 115,2 $\frac{53\,394 - 42115,2}{53\,394}$ × 100 = 20%	2
3.2.2	0,2 × 53 394 = 10 678,8 = 10 678 seats Accept 10 679	2

3.2.3	£49 × 1,15 = £56,35 £56,35 × 53 394 = £3 008 751,90	**3**
3.3.1	x = 3 **ACCEPT** $\frac{3}{10}$	**2**
3.3.2	$P_{HD} = \frac{1}{2} \times \frac{1}{10} = \frac{1}{20}$	**2**
3.3.3	$P_W = \frac{1}{4} + \frac{4}{20}$ $= \frac{9}{20}$	**2**

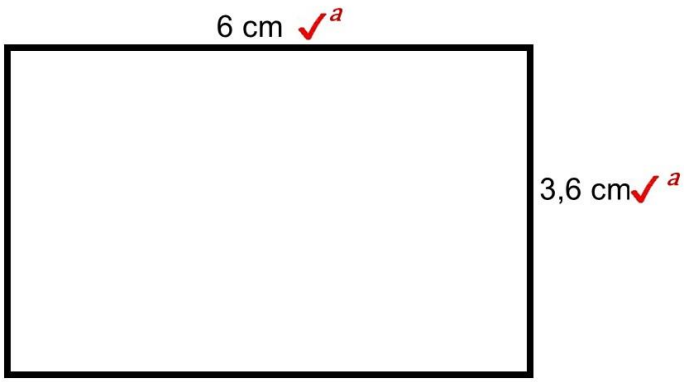
QUESTION 4

Q Nr	Marking Guideline	Level
4.1	1 200 × 2 + 300 = R2 700	2
4.2.1	V = 26 × 34,5 × 19 V = 17 043 cm³	2
4.2.2	70 cm ÷ 34,5 cm = 2,028 … = 2 shoe boxes 51 cm ÷ 26 cm = 1,96 = 1 shoe boxes 15 × 2,54 = 38,1 cm height 38,1 ÷ 19 = 2,005 = 2 shoe boxes 2 × 1 × 2 = 4 boxes **OR** 51cm ÷ 34,5cm = 1 shoe boxes 70cm ÷ 26cm = 2 shoe boxes 15 × 2,54 = 38,1 cm height 38,1 ÷ 19 = 2 shoe boxes 2 × 1 × 2 = 4 boxes	3
4.2.3	Large box 4 093 cm² × 0,502 cents = 2 054,686 cents = R20,54686 Small box 3 034 cm² × 0,502 cents = 1 523,068 cents = R15,23068 R20,54686 – R15,23068 **ACCEPT RAND OR CENTS** = R5,31618 = R5,32 5,32 ÷ 20,54686 × 100 = 25,89 %	4

4.2.4	i	Northern Cape	**1**
	ii	South West	**1**
	iii	4 cm ÷ 3,1 cm × 300 km = 425,8 km **VARIOUS MEASUREMENTS OF THE LINE AND BAR SCALE ACCEPTED.**	**2**
	iv	Time = 505,5 ÷ 98 = 5,15816 hrs = 5 hrs 9 mins 09h00 + 5hrs 9 min = 14:09	**3**
	v	Speed = 505,5 ÷ 3hrs 20 min = 505,5 ÷ $3\frac{20}{60}$ = 151,65km/h	**3**

QUESTION 5

Q Nr	Marking Guideline	Level
5.1.1	Banghoek and Joubert Street **OR** Hammanshand and Joubert Street	1
5.1.2	Marais Street	1
5.2.1	Length = 5,8 m Width = 4,5 m	1
5.2.2	2	1
5.2.3	4,5 m = 450 cm 450 cm ÷ 8 cm = 56,25 1 : 56,25 **ACCEPT** 1 : 56, if units included -1	1
5.2.4	Area of Room = 3 × 3 = 9 m² 5 m² = R750 9 m² – 5 m² = 4 m² at additional rate 4 m² × R145,00 = R580 R750 + R580 = R1 330 Sofi does not have enough money.	4
5.2.5	Area of Wall = 3 × 1,8 × 2 Area of Wall = 5,4 m² × 2 (two layers of paint) Area of Wall = 10,8 m²/paint 10,8 ÷ 6 = 1,8 litres	3

5.2.6		**3**
5.3	3 m – 140 cm – 61 cm × 2 = 3 m – 1,4 m – 1,22 m = 0,38 m 0,38 m ÷ 2 = 0,19 m = 19 cm either side. OR 3 m – 140 cm – 61 cm × 2 = 300 cm – 140 cm – 61 cm × 2 = 38 cm 38 cm ÷ 2 = 19 cm either side.	**3**

Total: 150 marks