NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2023

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	Possible Solution	Cognitive Level
1.1.1	175 g ÷ 1 000 = 0,175 kg	1
1.1.2	25 g	1
1.1.3	$\frac{25}{175}$	1
1.1.4	$\frac{1}{7} \times 100$ = 14,3%	1
1.2.1	1. E 2. D 3. B 4. F 5. A 6. C	1
1.2.2 (a)	$\frac{1}{3} \times 22 \times 22 \times 5$ = 806,6666 = 810 cm^3	1
1.2.2 (b)	**C.** cm^3	1
1.2.2 (c)	7,5 × 2,54 = 19,05 cm WILL NOT	1
1.3.1	2 × 15 ÷ 5 = 6 teaspoons	1
1.3.2	$155 \div \frac{3}{4}$ = 206,6667	1
1.3.3	7 × 40 = 280 g	1
1.3.4	180 ÷ 15 = 12 g each	1

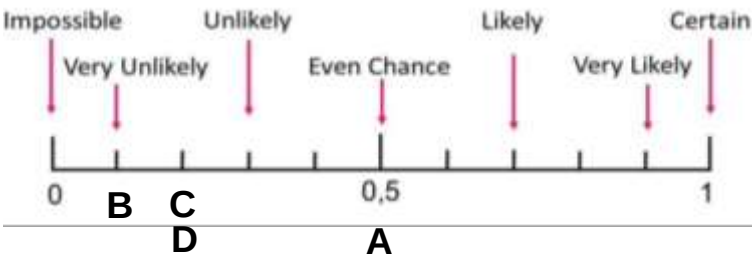
QUESTION 2

Q. Nr	Possible Solution	Cognitive Level
2.1.1	66 ÷ 2 = 33 cm	1
2.1.2	Distance = 2 × 3,142 × 33 = 2 × 3,142 × 0,33 = 2,073720 m **OR if use pi = 2,073451**	3
2.1.3	21,2 km ÷ 2,073720 m = 21,2 km ÷ 0,002073720 km = 10 224 turns **OR if use pi = 10 224**	3
2.1.4 (a)	34 : 51 2 : 3	2
2.1.4 (b)	M34 = {34; 68; 102; 136; 170 …} M51 = {51; 102, 221 …} 3 rotations on the small wheel and 2 rotation on big wheel	3
2.2.1	Average Speed = (28 + 12 + 48 + 28) ÷ 4 = 29 km/h	3
2.2.2	Time = 500 m ÷ 28 km/h = 0,5 km ÷ 28 km/h = 0,017857142 hours = 0 hours 1 minutes	2
2.2.3	First 500 m = 0,5 km ÷ 28 km/h = 1 min 500 m – 1 000 m = 0,5 km ÷ 12 km/h = 2,5 min 1 000 m – 1 500 m = 0,5 km ÷ 48 km/h = 0,625 min 1 500 m – 2 000 m = 0,5 km ÷ 28 km/h = 1 min TOTAL **5,265** $\frac{\mathbf{5,265}}{\mathbf{5}\ \boldsymbol{hr}\ \mathbf{4}\ \boldsymbol{min}}$ $= \frac{\mathbf{5,265}}{\mathbf{304}\ \boldsymbol{min}}$ $= \frac{\mathbf{1053}}{\mathbf{60\,800}}$ **OR** 5,125 ÷ (5 × 60 +4) $= \frac{41}{2\,432}$	3
2.3	40º	1

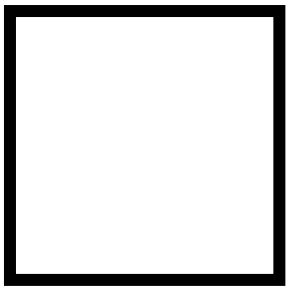
QUESTION 3

Q. Nr	Possible Solution	Cognitive Level
3.1.1	Oven OR Stove	1
3.1.2	22' × 30,48 = 670,56 37' × 30,48 = 1 127,76 670,56 × 1 127,76 = 756 230,7456 m^2 = 756 230,7456 ÷ 100^2 = 75,62 m^2 OR 22 × 0,3048 × 37 × 0,048 = 75,62 m^2	3
3.1.3	35 ºF = 1,8 ºC + 32 35 ºF – 32 = 1,8 ºC ºC = $\frac{3}{1,8}$ ºC = 1,667	2
3.2	70 ÷ 8,5 = 8,235 = 8 tins in the length 30 ÷ 8,5 = 3,529 = 3 tins in the width 37 ÷ 9,7 = 3,81 = 3 tins in the height 8 × 3 × 3 = 72 tins stacked on one shelf Thus 144 tins on two shelves Therefore, donation will fit on two shelves.	4
3.3.1	(41 – 40) ÷ 2 = 0,5 cm	2
3.3.2	Diameter of Pot = 40 cm Radius of Pot = 20 cm Volume = 3,142 × 20 × 20 × 27 = 33 933,6 cm^2 = 33 933,6 ml 33 933,6 ÷ 400 = 84,8205 = 84 bowls of soup	3
3.3.3	240 ÷ 84 = 2,857 = 3 pots	2

QUESTION 4

Q. Nr	Possible Solution	Cognitive Level
4.1.1	$\frac{1}{2} + x + \frac{1}{5} + 2x = 1$ $+ 3x = 1$ $3x = \frac{3}{10}$ $x = \frac{1}{10} = 0{,}1$ Probability for Cloudy: $x = \frac{1}{10} = 0{,}1 = 10\%$ Probability for Rainy day: $x = \frac{2}{10} = 0{,}2 = 20\%$ **OR** 100 – 70 = 30 Cloudy: 30 ÷ 3 = 10% Rainy: 20%	4
4.1.2		2
4.2.1	Northwest	1
4.2.2	N1	1
4.3.1	2,4 × 5 = 12 m	2
4.3.2	10 m ÷ 2 m/sec = 5 sec Yes the spectator will not get to the camera on time **OR** Distance in 6 sec: 6 × 2 = 12 m Yes, spectator will het to the camera on time as it is a smaller distance to cover	4
4.3.3	1,9 m × 12 = 22,8 m	2
4.3.4	9 m × 2 = 18 m wide	1
4.3.5	75 minutes	1
4.4.1	123 ºC	1
4.4.2	$\frac{9}{5} = \frac{18}{10} = 1{,}8$	2

QUESTION 5

Q. Nr	Possible Solution	Cognitive Level
5.1	 4 cm	2
5.2.1	$\frac{6}{12} \times 100$ = 50%	2
5.2.2	One koekie taken out of the box already, thus leaving 3 koekies left and only 11 products left.	4
5.2.3	$\frac{4}{12} \times \frac{3}{11} = \frac{1}{11}$	2
5.3.1	2 OR 3	1
5.3.2	Castle of Good Hope	1
5.4.1	Canterbury Street	1
5.4.2	4, 5 or 6	1
5.4.3 (a)	Constitution Street	1
5.4.3 (b)	SMALL MAP Bar Scale: range of1,4–1,6 cm : 20 m Total in cm: range of 9,1–9,3 cm 9,2 ÷ 1,5 × 20 = 122,66667 m **LARGE MAP** Bar Scale: range of 2,2–2,4 cm : 20 m Total in cm: range of 13,7–13,9 cm 13,8 ÷ 2,3 × 20 = 120 m	2
5.4.3 (c)	Time taken to walk: 12:40 – 12:10 = 30 minutes Speed = 120 m ÷ 30 min = 0,12 km ÷ $\frac{30}{60}$ hr = 0,24 km/h **OR** 0,12 ÷ 0,24 = 0,5hrs = 30 min	4
5.4.4	See on map on next page.	4

Total: 150 marks