NATIONAL SENIOR CERTIFICATE EXAMINATION
MAY 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.

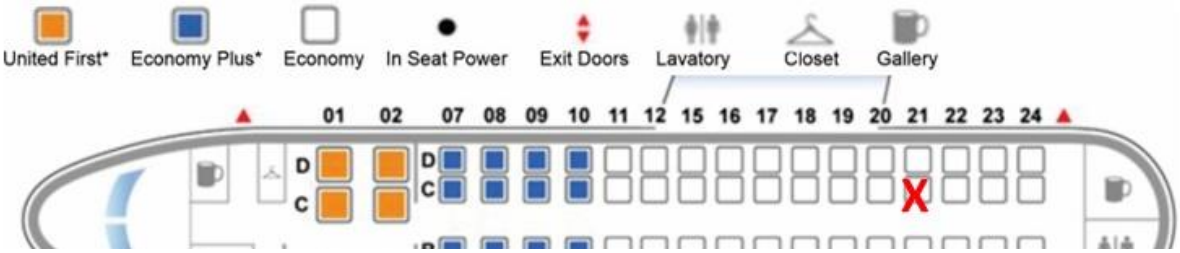
The IEB will not enter into any discussions or correspondence about any marking guidelines. It is acknowledged that there may be different views about some matters of emphasis or detail in the guidelines. It is also recognised that, without the benefit of attendance at a standardisation meeting, there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

QUESTION 1

QUESTION NUMBER	MARKING GUIDELINES	LEVEL DISTRIBUTION
1.1.1	19	1
1.1.2	14,7868 × 2 = 29,5736 ml accept 29,57; 29,6 or 30	1
1.1.3	0,6 kg	1
1.1.4		1
1.2.1	75 min = 1 hr 15 min	1
1.2.2	12 ÷ 4 = 3 eggs	1
1.3	B E C D F G A	1
1.4.1	Bar Scale OR Linear Scale	1
1.4.2	Northeast	1
1.4.3	N2	1
1.4.4	5 Due to scale on question paper, accept 1,9 cm = 5 km 2 cm = 5,26 km = 5,3 km	1
1.4.5	B	1

QUESTION 2

QUESTION NUMBER	MARKING GUIDELINES	LEVEL DISTRIBUTION
2.1	Speed = 422 km ÷ 5 hr 10 min = $422 \div 5\frac{10}{60}$ = 81,677 km/h Accept 422 ÷5,2 = 81,154	2
2.2	Phalaborwa	1
2.3.1	140 km	1
2.3.2	$\frac{1}{3} \times 180 = 60$ km dirt road 180 – 60 = 120 km tar road Time = 60 ÷ 40 + 120 ÷ 50 km/h = 3,9 hrs = 3 hrs 54 minutes	3
2.4.1	6 + 4 × 16 = 70 seats	2
2.4.2	Number of seats: 32 32 × 7 = 224 kg ÷ 1 000 = 0,224 tonnes OR 7 kg ÷ 1 000 = 0,007 tonnes 0,007 tonnes x 32 = 0,224 tonnes	4
2.4.3	**MARK ON THE DIAGRAM**	1



2.5.1	2 inches	1
2.5.2	Volume = 4,4962 × 3,7 × 12 = 199,63128 cm^3 = 199,63128 ml 199,63128 ml ÷ 29,574 ml = 7,75 fluid ounces	3
2.5.3	9	2

QUESTION 3

QUESTION NUMBER	MARKING GUIDELINES	LEVEL DISTRIBUTION
3.1.1	C4	1
3.1.2	Treasure chest	1
3.1.3	1,4 cm × 1,2 cm = 1 400 cm × 1 200 cm = 0,014 km × 0,012 km = 0,000 168 km² = 0,000 17 km² OR Dimensions 1,4 cm × 1,3 cm = 0,000 18 km² Dimensions 1,4 cm × 1,4 cm = 0,000 2 km²	2
3.2.1	100	1
3.2.2	$\frac{7}{100}$ (accept 7% or 0,07)	1
3.2.3	B. cube F. 6 faces	1
3.2.4	21	4
3.2.5	7	4
3.2.6	Area = 6 × 1,3 ² = 10,14 cm²	2
3.3	Place seat cushions resting on the top of the back rest and back cushions as the roof.	2
3.4.1	$\frac{12}{52}$	2
3.4.2	One card was withdrawn and not replaced.	4
3.4.3	A	4

QUESTION 4

QUESTION NUMBER	MARKING GUIDELINES	LEVEL DISTRIBUTION
4.1	Garden Plan A P = 2(7,5 + 2) = 19 m A = 7,5 × 2 = 15 m² Garden Plan B P = 2(5 + 3) = 16 m A = 5 × 3 = 15 m² Garden Plan B	2
4.2.1	3m × 3 = 9 m	2
4.2.2	$2 \times 1\frac{15}{60} \div 3$ = 0,83333 hrs = 0 hr 50 minutes	3
4.2.3	Surface Area = 2 × ½ × 2,6 × 3 + 2 × 5 × 3 = 7,8 + 30 = 37,8 m²	3
4.2.4	Volume = 3 m x 5 m × 5 cm = 15 m² × 5 cm = 15 m² × 0,05 m = 0,75 m³	2
4.3.1	Radius = 1 500 ÷ 2 = 750 mm = 75 cm	2
4.3.2	Volume = 3,142 × 75² × 182 = 3 216 622,5 cm³ × 0,001 = 3 216,6 Litres Difference due to thickness of the material (tank); OR Possibly has filter inside; OR Dome shape on the top; OR Draining pipe does not lie below the tank but on the side, so cannot extract all water.	4
4.4.1	°C = (40 – 32) ÷ 1,8 = 4,444 °C	2

4.4.2	60 cm = 0,6 m 7,5 m ÷ 0,6 m = 12,5 = 12 plants along the length 2 m ÷ 0,6 m = 3,3 = 3 plants along the width 12 × 3 = 36 plants ACCEPT 13 PLANTS ALONG THE LENGTH AND 4 ALONG THE WIDTH 13 x 4 = 52 plants	3

QUESTION 5

QUESTION NUMBER	MARKING GUIDELINES	LEVEL DISTRIBUTION
5.1.1	3	1
5.1.2	West	1
5.1.3	110 mm : 10 700 mm 10 700 mm ÷ 110 = 97,2727 1 : 97,2727 1 : 100 **Check scale on enlarged script**	2
5.1.4	32 mm × 31 mm = 3,25 m × 3,1 m = 9,92 m² Calculations are incorrect **Check scale on enlarged script**	2
5.1.5	Southern Elevation	4
5.2.1	Length = 100 + (2 × 2) + (1,5 × 2) = 107 cm Width = 75 + (2 × 2) + (1,5 × 2) = 82 cm	4
5.2.2	Perimeter = 2 (100 + 75) + 100 + 75 = 525 cm OR 3 × 100 + 3 × 75 = 525 cm	2
5.3.1	15 ml × 2 = 30 ml	2
5.3.2	$\frac{1}{4}$ × 40 ml = 10 ml Green : White 1 : 4 10 ml ÷ 4 = 2,5 ml Blue : White 2 : 4 10 ÷ 4 × 2 = 5 ml	3

Total: 150 marks