NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2016

MATHEMATICAL LITERACY: PAPER I

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

1.1 31/12/2015 (2)

1.2 R925,58 ÷ R1036,60 × 100 = 89,29%
OR R811,92 ÷ R909,31 × 100 = 89,29%
OR R89,74 + R12,56 = R102,30
OR R1,90 + R30,20 + R12,55 + R57,65 =102,30 (4)

1.3 1.3.1 A = R1036,60 – 8,72 – 925,58 = R102,30
OR 12,56 ÷ 0,14 × 1,14 = R102,27 (2)

1.3.2 B = R1036,60 – R127,29 = R909,31
OR R127,29 ÷ 0,14 × 1 = R909,21
OR R1036,60 ÷ 1,14 = R909,30
OR R811,92 + 89,74 + 7,65 = R909,31 (2)

1.3.3 C = R909,31 – R7,65 – R811,92 = R89,74
OR R12,56 ÷ 14% = R89,71
OR R102,30 – R12,56 = R89,74
OR R1,67 + R26,49 + R11,01 + R50,57 = R89,74 (2)

1.3.4 D = R89,74 – R50,57 – R26,49 – R1,67 = R11,01
OR R12,55 – R1,54 = R11,01 (2)

1.4 R15,79 × 14% = R2,21 (2)

1.5 R7,65 ÷ 5 = R1,53 (2)

1.6 1.6.1 1:33 = 60 + 33 = 93 sec (3)

1.6.2 R2,04 ÷ 93 = R0.02 = 2,2 cent
OR 204 cents ÷ 93 = 2,19 cents (3)

[24]

QUESTION 2

2.1 90 cm – 1 cm – 1 cm = 88 cm (3)

2.2 88 cm ÷ 8,1 cm
= 10,86
= 10 files (3)

2.3 31,5 × 2,54
= 80,01
= 80 cm (3)

2.4 80 cm – 2 cm – 1 cm – 1 cm – 35 cm
= 41 cm (4)

2.5 2.5.1 A = l × b
= 90 cm × 80 cm
= 7 200 cm^2 (3)

2.5.2 7 200 cm^2 ÷ 10 000
= 0,72 m^2 (2)

2.5.3 0,72 m^2 ÷ 6
= 0,12ℓ (2)

2.5.4 0,12 ℓ × 1 000
= 120 mℓ (2)

[22]

QUESTION 3

3.1 3.1.1 486 km (2)

3.1.2 Southerly Direction
OR South Easterly (2)

3.1.3 N3 (2)

3.1.4 (a) 35×13
$= 455$ km (2)

(b) No, she will not be able to travel on one tank of petrol. (2)

3.2 3.2.1 $a = 3{,}5$ cm (accept between 3,3–3,7) (2)

3.2.2 b = 1,5 m × 100
= 150 cm (2)

3.2.3 1 : 42,86 (accept between 45,45–40,54) (2)

3.2.4 14,8 cm (accept between 14,6–15) (2)

3.2.5 $14{,}8 \times 42{,}86 = 634{,}33 \div 100 = 6{,}34$ (accept between 6,25–6,43) (3)

3.2.6 $\frac{5}{25} = \frac{1}{5}$ OR 0,2 OR 20% (2)

[23]

QUESTION 4

4.1 2050 – 2017 = 33 + 1 = 34 years (2)

4.2 8 million tons or 8 000 000 tons (2)

4.3 8 000 000 × 1 000
8 000 000 000 kg (2)

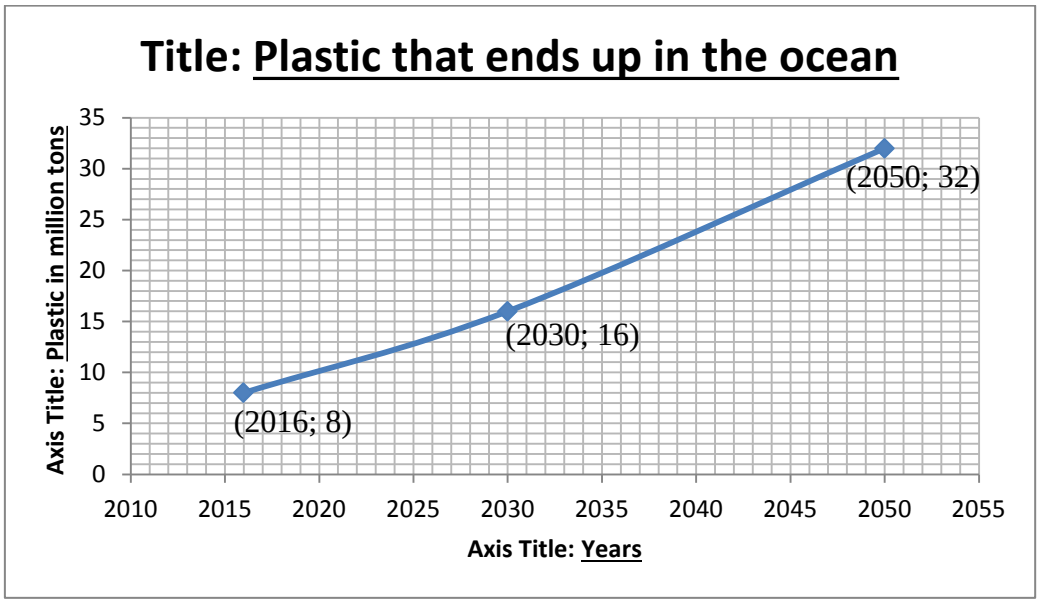
4.4 (a) $913{,}24 \times 24 = 21\,917{,}76$ t
OR 8 000 000 ÷ 365 = 21 917,81 t (2)

(b) $913{,}24 \div 60 = 15{,}22$ t
OR 8 000 000 ÷ 365 ÷ 24 ÷ 60 = 15,22 t (2)

4.5 15,22 t (accept 15 t) (2)

4.6 4 × 15,22 = 60,88 t (2)

4.7 4.7.1



(6)

4.7.2 24 million t (2)

4.8 4.8.1 2002–2010 (2)

4.8.2 China (accept Shanghai) (2)

4.8.3 (a) $34 - 4,2 = 29,8\%$ (3)

(b) $$\frac{34+27+26,8+22+18+13+12,5+12+11,5+4,2}{10}$$

$$= \frac{181}{10}$$

$= 18,1\%$ (4)

(c) $\frac{13+18}{2} = 15,5\ \%$ (3)

[36]

QUESTION 5

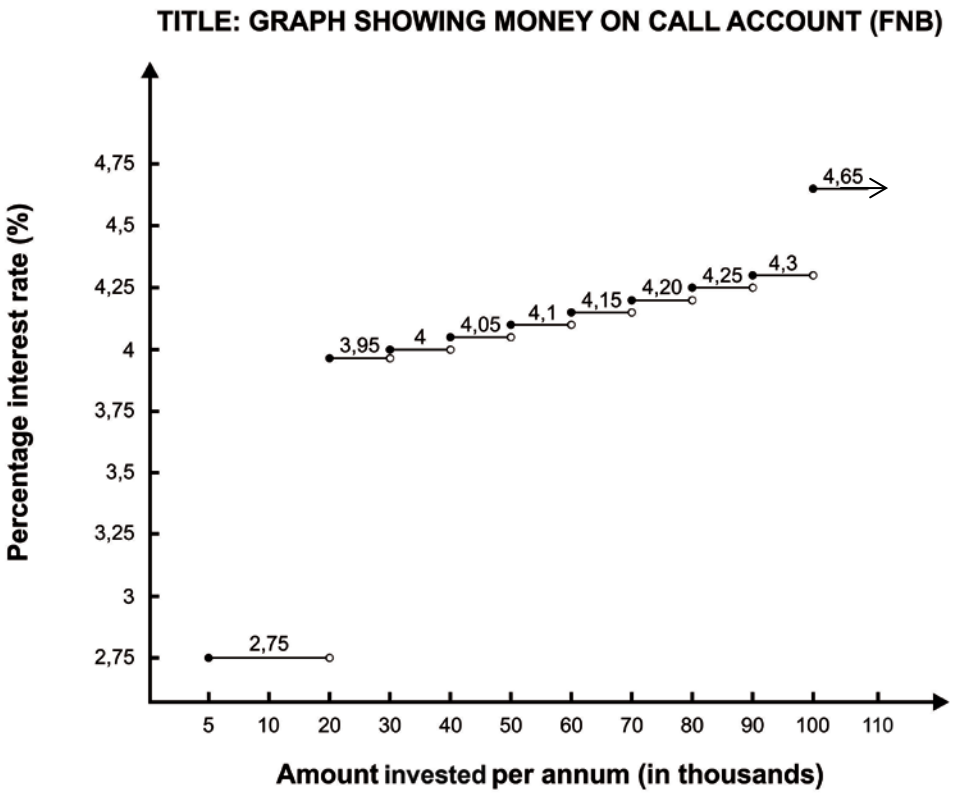
5.1 700 000 + 41 000 + 225 900 + 100 000 + 135 000 + 70 000 = R1 271 900 (3)

5.2 5.2.1 Standard Bank MoneyMarket Call Account (2)

5.2.2 Y_1: 700 000 × 105,65% = 739 550
Y_2: 739 550 × 105,65% = 781 334,58

OR A = 700 000$(1 + 5{,}65\%)^2$ = 781 334,58
Simple Interest Option
700 000 × 5,65% = 39 550
700 000 + 39 550 × 2 = 779 100
OR A = 700 000 (1+5,65% × 2) = 779 100 (5)

5.2.3



(6)

5.3 5.3.1 225 900 × 0,83 = 187 497
187 497 × 0,83 = R155 622,51
OR A = 225 900 $(1 - 17\%)^2$ = 155 622,51
Simple Interest Option
225 900 × 17% = 38 403
225 900 – (38403 × 2) = 149 094
OR A = 225 900 (1 – 17% × 2) = 149 094 (4)

5.3.2 225 900 × 109,2% = 246 682,80
246 682,80 × 109,2% = R 269 377,62 (4)

5.3.3 269 377,62 – 155 622,51 = R113 755,11 (2)

5.4 5.4.1 $50 \times 10 = 500$ people (3)

5.4.2 $500 \times R450 = R225\ 000$ (2)

5.5 5.5.1 $A = \pi r^2$

$A = 3,14 \times (2,5)^2$
$A = 19,63\ m^2$
$= 20\ m^2$ (3)

5.5.2 (a) $A = 2\pi rh$
$A = 2 \times 3,14 \times (2,5)\ (1,2)$
$A = 18,84\ m^2$ (2)

(b) $18,84 \div 2,4 = 7,85 \approx 8\ \ell \therefore 8$ *cans* (3)

5.6 5.6.1 1 OR 100% OR $\frac{5}{5}$ OR certain (2)

5.6.2 $\frac{1}{5} \times 100$
$= 20\%$ (4)
[45]

Total: 150 marks