



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 $R925,58 \div R1036,60 \times 100 = 89,29\%$
 OR $R811,92 \div R909,31 \times 100 = 89,29\%$
 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 $12,56 \div 0,14 \times 1,14 = R102,27$ (2)
- 1.3.2 $B = R1036,60 - R127,29 = R909,31$
 OR $R127,29 \div 0,14 \times 1 = R909,21$
 OR $R1036,60 \div 1,14 = R909,30$
 OR $R811,92 + 89,74 + 7,65 = R909,31$ (2)
- 1.3.3 $C = R909,31 - R7,65 - R811,92 = R89,74$
 OR $R12,56 \div 14\% = R89,71$
 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 $R15,79 \times 14\% = R2,21$ (2)
- 1.5 $R7,65 \div 5 = R1,53$ (2)
- 1.6 1.6.1 $1:33 = 60 + 33 = 93 \text{ sec}$ (3)
- 1.6.2 $R2,04 \div 93 = R0.02 = 2,2 \text{ cent}$
 OR $204 \text{ cents} \div 93 = 2,19 \text{ cents}$ (3)

[24]**QUESTION 2**

- 2.1 $90 \text{ cm} - 1 \text{ cm} - 1 \text{ cm} = 88 \text{ cm}$ (3)
- 2.2 $88 \text{ cm} \div 8,1 \text{ cm}$
 $= 10,86$
 $= 10 \text{ files}$ (3)
- 2.3 $31,5 \times 2,54$
 $= 80,01$
 $= 80 \text{ cm}$ (3)
- 2.4 $80 \text{ cm} - 2 \text{ cm} - 1 \text{ cm} - 1 \text{ cm} - 35 \text{ cm}$
 $= 41 \text{ cm}$ (4)
- 2.5 2.5.1 $A = 1 \times b$
 $= 90 \text{ cm} \times 80 \text{ cm}$
 $= 7\,200 \text{ cm}^2$ (3)
- 2.5.2 $7\,200 \text{ cm}^2 \div 10\,000$
 $= 0,72 \text{ m}^2$ (2)
- 2.5.3 $0,72 \text{ m}^2 \div 6$
 $= 0,12 \ell$ (2)
- 2.5.4 $0,12 \ell \times 1\,000$
 $= 120 \text{ m}\ell$ (2)

[22]

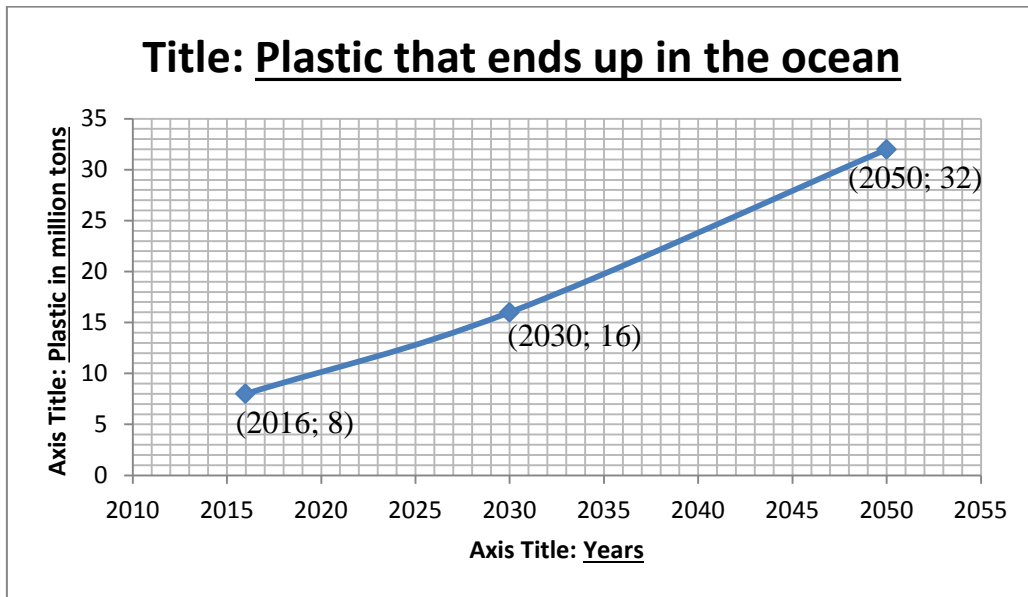
QUESTION 3

- 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 \times 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 $8\,000\,000 \times 1\,000$
8 000 000 000 kg (2)
- 4.4 (a) $913,24 \times 24 = 21\,917,76$ t
OR $8\,000\,000 \div 365 = 21\,917,81$ t (2)
- (b) $913,24 \div 60 = 15,22$ t
OR $8\,000\,000 \div 365 \div 24 \div 60 = 15,22$ t (2)
- 4.5 15,22 t (accept 15 t) (2)
- 4.6 $4 \times 15,22 = 60,88$ 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 $Y_1: 700\,000 \times 105,65\% = 739\,550$
 $Y_2: 739\,550 \times 105,65\% = 781\,334,58$

OR $A = 700\,000(1 + 5,65\%)^2 = 781\,334,58$

Simple Interest Option

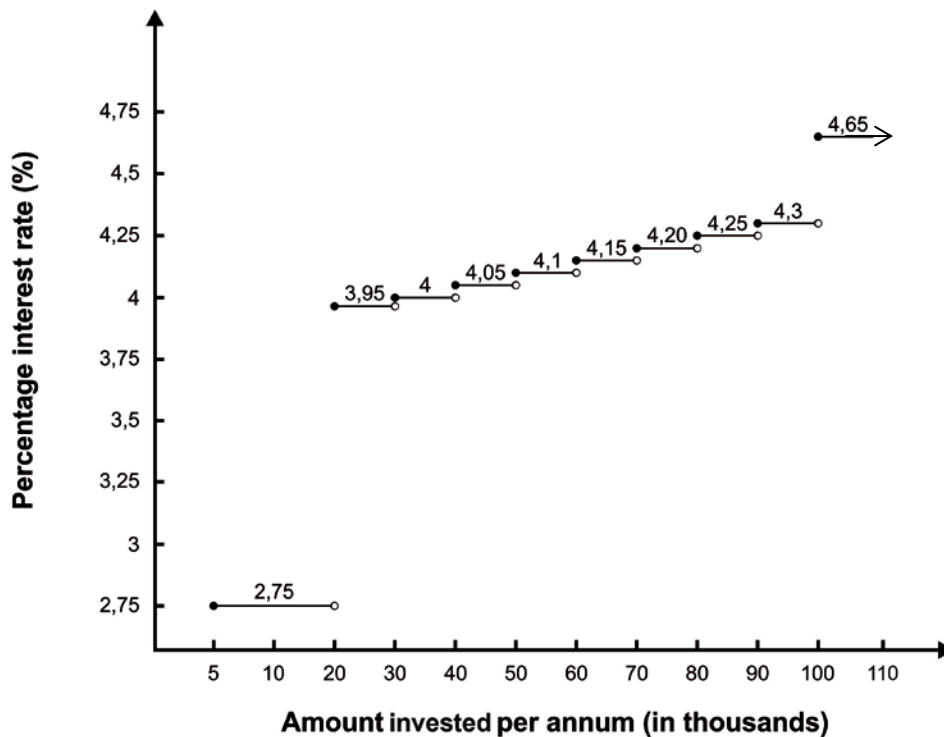
$700\,000 \times 5,65\% = 39\,550$

$700\,000 + 39\,550 \times 2 = 779\,100$

OR $A = 700\,000 (1 + 5,65\% \times 2) = 779\,100$ (5)

5.2.3

TITLE: GRAPH SHOWING MONEY ON CALL ACCOUNT (FNB)



(6)

5.3 5.3.1 $225\,900 \times 0,83 = 187\,497$
 $187\,497 \times 0,83 = R155\,622,51$
 OR $A = 225\,900 (1 - 17\%)^2 = 155\,622,51$

Simple Interest Option

$225\,900 \times 17\% = 38\,403$

$225\,900 - (38403 \times 2) = 149\,094$

OR $A = 225\,900 (1 - 17\% \times 2) = 149\,094$ (4)

5.3.2 $225\,900 \times 109,2\% = 246\,682,80$
 $246\,682,80 \times 109,2\% = R\,269\,377,62$ (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) $18,84 \div 2,4 = 7,85 \approx 8\ l \therefore 8\ cans$ (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