

Standard Form Past Paper Answers IGCSE Edexcel - Calculator

1.

Question	Working	Answer	Mark	Notes
a		80 000	1	B1
b	$0.5 \times 10^{5-8}$ or 0.0005 or 5×10^n or 5.0×10^n	5×10^{-4}	2	M1 A1 for 5×10^{-4} or 5.0×10^{-4} SC : B1 for $\frac{1}{2000}$ or $\frac{1}{2 \times 10^3}$

2.

Question	Working	Answer	Mark	AO	Notes
a		140 000	1	AO1	B1
b		Mars	1	AO1	B1
c	$1.2 \times 10^5 - 5 \times 10^4$ or 120000 – 50000 or 70000 oe			AO1	M1
d	$3.5 \times 10^3 : 1.4 \times 10^6$	7×10^4	2		A1
		1 : 400	2	AO1	M1 A1

3.

(a)		1.39×10^6	1	B1
(b)		5×10^{-3}	1	B1
Total 2 marks				

4.

(a)		4.51×10^{-4}	1	B1 cao
(b)	$\frac{780000}{0.00024}$			M1 for 3250000000 oe (e.g. 325×10^7) or $3.25 \times 10^{5-n}$ oe or 3.25×10^n where n is an integer
		3.25×10^9	2	A1
Total 3 marks				

5.

(a)	$2.57 \times 10^{10} + 6.01 \times 10^{10} + 5.80 \times 10^{10} + 1.91 \times 10^{10} + 8.21 \times 10^{10}$ or $2.57 + 6.01 + 5.8 + 1.91 + 8.21$ or 245 000 000 000 oe or digits 245		2	M1 for clear intention to add all surface areas
		2.45×10^{11}		A1 cao
(b)	$(1.22 \times 10^{13}) \div (7.45 \times 10^9)$ or 1637(.58...) or digits 1637(58...)		2	M1 condone missing brackets
		1640		A1 accept 1637 – 1640 (may be in standard form)
				Total 4 marks

6.

(a)		Russia	1	B1
(b)	$(2.63 \times 10^6) - (8.97 \times 10^5)$ or 1733(000) oe		2	M1 condone missing brackets
		1.733×10^6		A1 Accept 1.73×10^6
(c)	$(6.3 \times 10^5) \div (8.4 \times 10^6)$		2	M1
		7.5% oe		A1 accept percentage, fraction, decimal or ratio eg. $\frac{3}{40}$ or 0.075 or 3 : 37
				SC: B1 FOR A RATIO OF 3 : 40 OE
				Total 5 marks

7.

(a) (i)		4200000	1	B1
(a) (ii)		(0).000382	1	B1
(b)	8.6×10^{-9} 5.64×10^{-8} 5.6×10^{-7}		2	B2 B1 for smallest or largest in correct position
				Total 4 marks

8.

Working	Answer	Mark	Notes
$a^2 \times 10^{2n}$		3	M1
	$\frac{a^2}{10} \times 10^{2n+1}$		A1 for $\frac{a^2}{10}$ oe A1 for $\times 10^{2n+1}$ oe Award M1 A1 A1 for $\frac{a^2}{10} \times 10^{2n+1}$ even if M1 not awarded. Award M1 A1 A0 if $\frac{a^2}{10}$ oe seen. Award M1 A0 A1 if $\times 10^{2n+1}$ oe seen.
			Total 3 marks

9.

(a)		4.8×10^{11}	1	B1	
(b)		$2^{14} \times 3 \times 5^{10}$	3	B3 B2 B1	for the correct answer for an answer in the form $2^m \times 3 \times 5^n$, where m and n are positive integers for at least 2 correct steps in repeated prime factorisation (including tree diagram)
(c)		29 296 875	1	B1	Accept 3×5^{10} , 2.9296875×10^7

10.

Question	Working	Answer	Mark	Notes	
(a)		35 700 000	1	B1	
(b)	$(3.57 \times 10^7) \div (1.35 \times 10^4) (= 2644(.44\dots))$ or $35\,700\,000 \div 13\,500$ oe	2.6×10^3	2	M1 A1	or for 2600 – 2644. $\dot{4}$ must be in standard form and in the range $2.6 \times 10^3 - 2.6\dot{4} \times 10^3$

11.

a		0.00079	1	B1	cao
b		2.015×10^{10}	2	M1 A1	for 20.15×10^9 or 20 150 000 000 or 2.015×10^n where $n \neq 10$ For 2×10^{10} or better
					Total 3 marks