Mark scheme

Indices and standard form

Mathematics 0580 · Questions from Paper 1, Paper 2 and Paper 4

Total marks

26

MARKS FOR EACH QUESTION

1	2	3	4	5	6	7	8	9	10	Total
2	3	2	2	3	2	4	2	2	4	**26**

Question 1 [2]

1(a)	6.54×10^{-3}	**1**	
1(b)	99	**1**	

Question 2 [3]

2	**(a)** 1	1	
	(b) x^{10}	1	
	(c) p^{-7} or $\frac{1}{p^7}$	1	

Question 3 [2]

3(a)	1.36×10^{6} oe	**1**	
3(b)	5.21×10^{-3} oe	**1**	

Question 4 [2]

4 **(a)**	625	**1**	
(b)	9	**1**	

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Question 5 **[3]**

5(a)	7.09×10^{-3}	**1**	
5(b)	1.6×10^{9}	**2**	**B1** for 16×10^{8} oe

Question 6 **[2]**

6	7.36×10^{7}	**2**	**B1** for figs 736

Question 7 **[4]**

7(a)(i)	7×10^{-3}	**1**	
7(a)(ii)	7×10^{8}	**1**	
7(b)	3.6×10^{4}	**2**	**B1** for 36 000 or for writing *their* ordinary number correctly in standard form or for 36 000 written in incorrect standard form

Question 8 **[2]**

8	1.26×10^{25} or 1.257×10^{25} to 1.258×10^{25}	**2**	**M1** for $\frac{1000}{7.95 \times 10^{-23}}$ oe or **B1** for 1.26×10^{k} or 1.257×10^{k} to 1.258×10^{k}

Question 9 **[2]**

9	$10a + b$ or $a \times 10^{1} + b$ $(\times 10^{0})$	2	**M1** $[a \times 10^{7} + b \times 10^{6}] \div 10^{6}$

Question 10 **[4]**

10(a)	1.2 oe	**2**	**B1** for 3^{2p+3p} or 3^{6} soi
10(b)	$2x^{2}$ final answer	**2**	**B1** for kx^{2} or $2x^{k}$ as final answer or correct answer spoiled

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