1.

Without using a calculator, show clearly that $64^{\frac{2}{3}}$ is equal to 16.

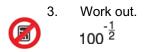
[2]

2. Evaluate.

(i) $3^0 + 4^{-1}$

 $16^{\frac{3}{4}}$

- (i)_____**[2]**
- (ii)______[2]



_____[3]

Work out.

 $16^{-\frac{3}{4}}$

.....[3]

END OF QUESTION PAPER

Question		n	Answer/Indicative content	Marks	Part marks and guidance		
1			$(64^{\frac{1}{3}})^2$ $= 4^2 = 16$	2	B1 for $(64^{\frac{1}{3}})^2$, 4^2 or $\sqrt[3]{4096}$ oe	Condone $(64^2)^{\frac{1}{3}}$ and $(4096)^{\frac{1}{3}}$ for B1	
			Total	2			
2		i	$1\frac{1}{4}$ oe	2	M1 for $[3^0] = 1$ or $[4^{-1}] = \frac{1}{4}$ oe	Examiner's Comments More able candidates correctly identified each term and added them, others were able to identify one term, usually the 3°. Less able candidates thought the negative power gave -4 and some added the 3 and 4 to get 7 and then raised that to the sum of the powers (i.e1).	
		ii	8	2	M1 for $[16^{\frac{1}{4}}] = \sqrt[4]{16}$ or better	Examiner's Comments Only the more able candidates were able to give the correct answer. A common wrong method 3 was 4 of 16. Those starting from 16³ were unable to get any further.	
			Total	4			

Qı	Question		Answer/Indicative content	Marks	Part marks and guidance		
3			1 10	3	B2 for $\sqrt{100}$ or $\sqrt{1}$ or $\sqrt{1}$ Or B1 for $100^{\frac{1}{2}}$ or 10 final answer or $\sqrt{100}$ Examiner's Comments Many candidates did not understand the relevance of the fraction or negative index with common answers of 50 or –50. A few realised that the negative index meant reciprocal but applied it to 100^2 .		
			Total	3			

Question	Answer/Indicative content	Marks	Part marks and guidance		
4	1/8 oe final answer	3	M1 for fourth root soi M1 for cube soi M1 for reciprocal soi Examiner's Co In part (b), can knowledge of it also weak. A foi interpreted the index but most $\frac{3}{4}$ was the sof 16 and showed 12 as working.	adidates' ndices was ew negative t thought that ame as $\frac{3}{4}$	
	Total	3		<u>, </u>	