

NAME \_\_\_\_\_ INDEX NUMBER \_\_\_\_\_

SCHOOL \_\_\_\_\_ DATE \_\_\_\_\_

## INDICES

	<i>KCSE 1989 – 2012 Form 2 Mathematics</i>	Working Space
1.	<p><b>1989 Q4 P2</b></p> <p>Simplify <math>\frac{25^{3/4} \times 0.9^2 \times 2^2}{5^{5/2} \times 3^3}</math> in the form <math>A/B</math> where A and B are integers</p> <p style="text-align: right;">(2 marks)</p>	
2.	<p><b>1990 Q4 P2</b></p> <p>Solve for x in <math>5^{2x-1} = 12^x</math></p> <p style="text-align: right;">(3 marks)</p>	
3.	<p>(2marks)</p> <p><b>1991 Q 4 P2</b></p> <p>Solve for x in <math>4^{x-1} = 32</math></p> <p style="text-align: right;">(3 marks)</p>	
4.	<p>(3marks)</p> <p><b>1993 Q8 P2</b></p> <p>Solve for x in <math>9^x + 3^{2x} - 1 = 53</math></p> <p style="text-align: right;">(3 marks)</p>	
5.	<p><b>1995 Q 5 P2</b></p> <p>Find the value of x in the following equations:</p>	

	$49^{x+1} + 7^{2x} = 350$ <p style="text-align: right;">(4 marks)</p>	Working Space
6.	<p><b>1996 Q 9 P2</b> Find the value of x which satisfies the equation</p> $16 x^2 = 8^{4x-3}$ <p style="text-align: right;">(3 marks)</p>	
7.	<p><b>1997 Q 7 P2</b> Find the value of m in the following equation</p> $\left(\frac{1}{27}\right)^m \times (81)^{-1} = 243$ <p style="text-align: right;">(3 marks)</p>	
8.	<p><b>1998 Q 10 P2</b> Given that <math>P = 3^y</math>, express the equation <math>3^{2y-1} + 2 \times 3^{y-1} = 1</math> terms of P. Hence or otherwise find the value of y in the equation</p> $3^{2y-1} + 2 \times 3^{y-1} = 1$ <p style="text-align: right;">(3 marks)</p>	
9.	<p><b>1999 Q 4 P2</b></p> $\sqrt{2^x \times 5^{2x} \div 2^{-x}}$ <p>Simplify</p>	

		(2 marks)	Working Space
10	<p><b>2000 Q 12 P2</b> Find the value of x which satisfy the equation</p> $5^{2x} - 6 \times 5^x + 5 = 0$	(4 marks)	
11	<p><b>2001 Q 2 P2</b> Solve for x in the equation</p> $32^{(x-3)} \div 8^{(x-4)} = 64 \div 2^x$	(3 marks)	
12	<p><b>2002 Q 7 P2</b></p> $\frac{81^{2x} \times 27^x}{9^x} = 729$ <p>Solve for x in the equation</p>	(3 marks)	
13	<p><b>2005 Q 1 P2</b> Find the value of y in the equation</p>		

	$\frac{243 \times 3^{2y}}{729 \times 3^y \div 3^{(2y-1)}} = 81$ <p style="text-align: right;">(3 marks)</p>	Working Space
14	<p><b>2008 Q 2 P1</b></p> $\frac{27^{\frac{2}{3}} \div 2^4}{32^{\frac{3}{5}}}$ <p>Simplify</p> <p style="text-align: right;">(3 marks)</p>	
15	<p><b>2009 Q 5 P1</b></p> <p>Without using logarithm tables or calculators, evaluate</p> $\frac{64^{\frac{1}{2}} \times 27000^{\frac{2}{3}}}{2^{-4} \times 3^0 \times 5^2}$ <p style="text-align: right;">(4 marks)</p>	
16	<p><b>2010 Q 8 P1</b></p> <p>Without using mathematical tables or a calculator, evaluate</p> $27^{\frac{2}{3}} \times \left(\frac{81}{16}\right)^{\frac{1}{4}}$ <p style="text-align: right;">(3 marks)</p>	
17	<p><b>2012 Q5 P1</b></p>	

Given that  $9^{2y} \times 2^x = 72$ , find the values of  $x$  and  $y$

(3 marks)