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PURE MATHS

Algebra and Functions

Level & Board	EDEXCEL (A-LEVEL)
TOPIC:	SURDS AND INDICES
PAPER TYPE:	QUESTION PAPER -4
TOTAL QUESTIONS	8
TOTAL MARKS	40

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Questions

Q1.

Solve the equation

(i)
$$2^x = \frac{1}{8}$$

(ii) $2^{2x+1} - 5(2^x) + 2 = 0$

(3)

(4) (Total for question = 7 marks)

Q2.

In this question you should show all stages of your working. Solutions relying on calculator technology are not acceptable. Given

$$\frac{3^{x-1}}{9^{-y-2}} = 27$$

express *y* in terms of *x*, writing your answer in simplest form.

(3)

(Total for question = 3 marks)

I am Sorry !!!!!

Q3.

Find the value of x if: $x^{4} - x^{2} - 2 = 0$ (5) (Total for question = 5 marks)

Q4.

Dr. Ashar Rana

Find, using algebra, all real solutions to the equation

(i)	$16a^4 = \frac{1}{81}$	(4)
(ii)	$16a^4 + 8a^2 + 1 = 0$	

(4)

(Total for question = 8 marks)

Q5.

Solve: $2^{2x+3} - 65(2^x - 1) - 57 = 0$

(4) (Total for question = 4 marks)

Q6.

(i) Solve the equation

$$3^{x} = \frac{1}{2}$$

 $3^{n} = \frac{1}{81}$ writing the answer as a surd in simplest form.

(3)

Find the value of x: (ii)

$$\sqrt[3]{3x-2} = 4$$

(3) (Total for question = 6 marks)



Q7.

Given

 $3^{2x-1+9} = 27$

express y in terms of x, writing your answer in simplest form.

(Total for question = 3 marks)



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Q8. If $2^x = 4^y = 8^z$ and $\frac{1}{2x} + \frac{1}{4y} + \frac{1}{6z} = \frac{24}{7}$, then find the value of z.

(Total for question = 5 marks)



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