

Phone: 00442081445350

www.chemistryonlinetuition.com

Emil:asherrana@chemistryonlinetuition.com

PURE MATHS

Algebra and Functions

Level & Board	EDEXCEL (A-LEVEL)
TOPIC:	SURDS AND INDICES
PAPER TYPE:	QUESTION PAPER -3
TOTAL QUESTIONS	8
TOTAL MARKS	40

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Questions

Q1.

Find the value of x,
$$x^{\frac{1}{2}} + x^{\frac{1}{6}} - 2 = 0$$

(4) (Total for question = 4 marks)



Q2.

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

(4) (Total for question = 4 marks)

I am Sorry !!!!!

Q3.

Solve the equation

(i)
$$2^x = \frac{1}{128}$$

(ii)
$$4^{2x-1} - 16^{x-1} = 348$$

(4) (Total for question = 7 marks)

(3)



Q4.

Find the value of x if: $2^{2x-5} = 1$

(3) (Total for question = 3 marks)

I am Sorry !!!!!

Q5.

(i) Solve the equation

$$3^x = \frac{1}{81}$$

writing the answer as a surd in simplest form.

(ii) Find the value of x:

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

(3) (Total for question = 6 marks)

(3)



Q6.

Find, using algebra, all real solutions to the equation

(i)
$$16a^2 = 2\sqrt{a}$$
 (4)

I am Sorry !!!!!

(ii)
$$x^4 - 12x^2 + 27 = 0$$

(4)

(Total for question = 8 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)



- International Phone/WhatsApp: 00442081445350
- · Website: www.chemistryonlinetuition.com
- Email: asherrana@chemistryonlinetuition.com
- · Address: 210-Old Brompton Road, London SW5 OBS, UK