

## CHEMISTRY ONLINE

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## PURE MATHS

## Algebra and Functions

## Level \& Board

 EDEXCEL (A-LEVEL)TOPIC: SURDS AND INDICES

PAPER TYPE:
QUESTION PAPER -38

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## Questions

Q1.
Find the value of $x, \quad x^{\frac{1}{2}}+x^{\frac{1}{6}}-2=0$
(Total for question = 4 marks)

Q2.
Solve: $2^{2 x+3}-65\left(2^{x}-1\right)-57=0$
(4)
(Total for question = 4 marks)

Q3.
Solve the equation
(i) $\quad 2^{x}=\frac{1}{128}$
(ii) $4^{2 x-1}-16^{x-1}=348$

Q5.
(i) Solve the equation

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

writing the answer as a surd in simplest form.
(3)
(ii) Find the value of x :

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

(3)
(Total for question = 6 marks)

Q6.
Find, using algebra, all real solutions to the equation
(i) $16 a^{2}=2 \sqrt{a}$
(ii) $x^{4}-12 x^{2}+27=0$
(4)
(Total for question = 8 marks)

Q7.
Given

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

express $y$ in terms of $x$, writing your answer in simplest form.
(Total for question = 3 marks)

## Q8.

If $2^{x}=4^{y}=8^{z}$ and $\frac{1}{2 x}+\frac{1}{4 y}+\frac{1}{6 z}=\frac{24}{7}$, then find the value of $z$.
(Total for question = 5 marks)


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