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PURE MATHS

Algebra and Functions

Level & Board	EDEXCEL (A-LEVEL)
TOPIC:	SURDS AND INDICES
PAPER TYPE:	QUESTION PAPER -5
TOTAL QUESTIONS	8
TOTAL MARKS	40

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Questions

Q1. Solve the equation

$$x\sqrt{2} - \sqrt{36} = x$$

Writing the answer as a surd in simplest form.

(4)

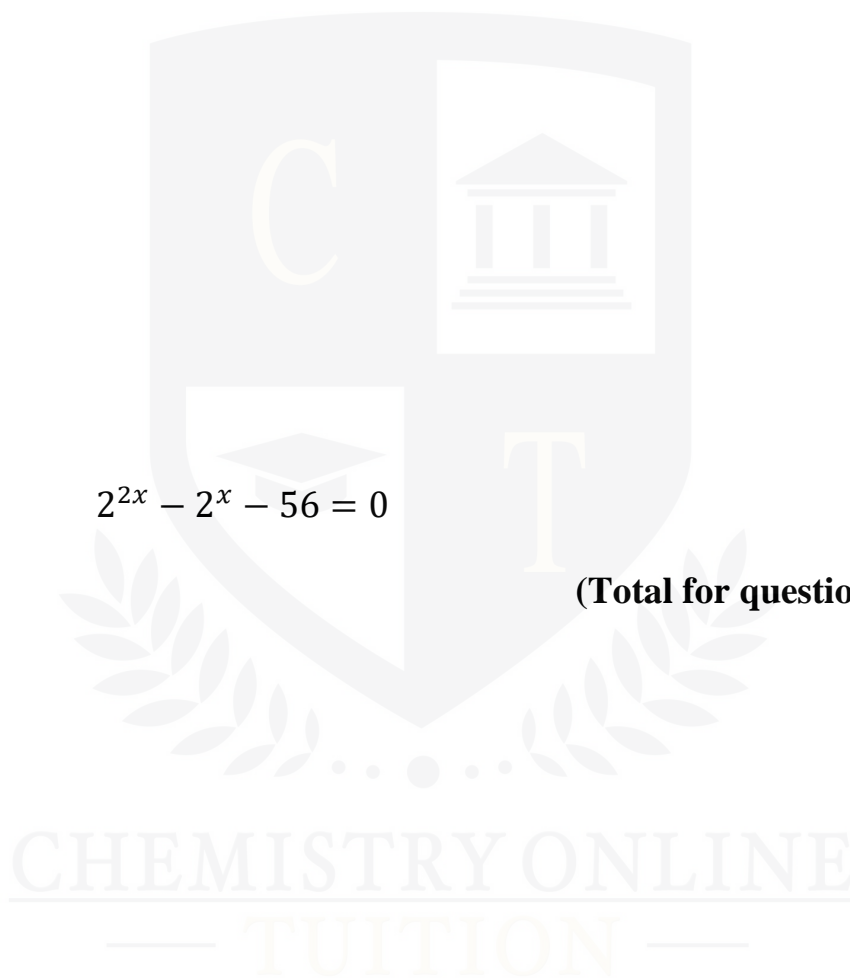
(Total for question = 4 marks)

Q2. Solve:

$$2^{2x} - 2^x - 56 = 0$$

(4)

(Total for question = 4 marks)



I am Sorry !!!!!

Q3.

Given

$$\frac{32^{x-12}}{8^{x-12}} = 16$$

express y in terms of x , writing your answer in simplest form.**(5)****(Total for question = 5 marks)****Q4.**

Given

$$2^x \times 4^y = \frac{1}{2\sqrt{2}}$$

express y as a function of x .**(Total for question = 3 marks)**

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Q5.

Solve the equation

(i) $x\sqrt{2} - \sqrt{18} = x$

Writing the answer as a surd in simplest form.

(3)

(ii) Solve the equation

$$4^{3x-2} = \frac{1}{2\sqrt{2}}$$

(4)

(Total for question = 7 marks)

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Q6.

Given

$$\frac{9^{x-1}}{3^{y+2}} = 81$$

express y in terms of x , writing your answer in simplest form.**(Total for question = 3 marks)****Q7.**

Find, using algebra, all real solutions to the equation

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

(4)

(ii) $b^4 - 3b^2 - 18 = 0$

(4)**(Total for question = 8 marks)**

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Q8.

A student was asked to give the exact solution to the equation

The student's attempt is shown below:

$$2^{2x} - 9(2^x) = 0$$

$$2^{2x} + 2^4 - 9(2^x) = 0$$

$$\text{Let } 2^x = y$$

$$y^2 - 9y + 8 = 0$$

$$(y - 8)(y - 1) = 0$$

$$y = -8 \quad \text{or} \quad y = 1$$

$$\text{So } x = 3 \quad \text{or} \quad x = 0$$

(a) Identify the two errors made by the student.

(2)

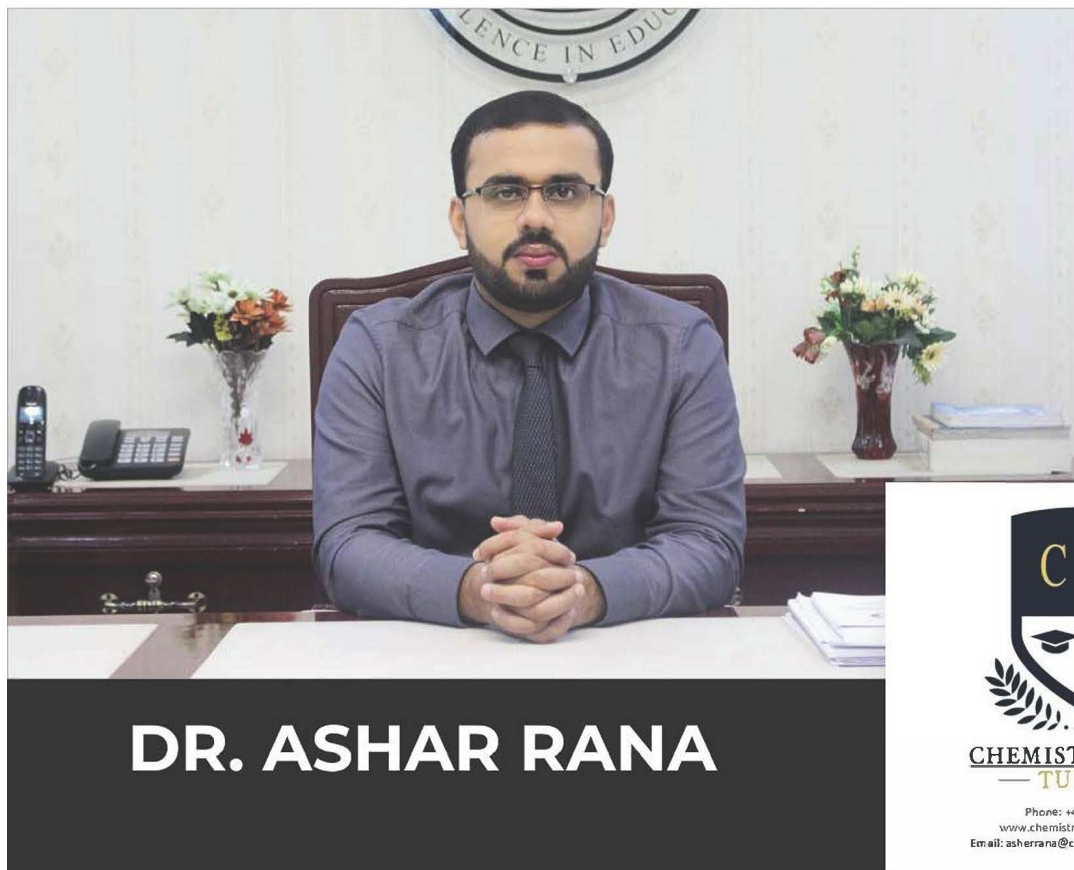
(b) Find the exact solution to the equation.

(2)

(Total for question = 4 marks)

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