PURE MATH

ALGEBRA AND FUNCTION

Level & Board	EDEXCEL (A-LEVEL)
TOPIC:	QUADRATICS
PAPER TYPE:	QUESTION PAPER 5
TOTAL QUESTIONS	8
TOTAL MARKS	38

Questions

Q1.

Find the solution set of the equation $\frac{-x^2-1}{-2x-6} = \frac{1}{5}$ in $\mathbb{R}$, giving values to one decimal place.

(5)

(Total for question = 5 marks)

Q2.

The equation $x^2 + (k-3)x + (3-2k) = 0$, where k is a constant, has two distinct real roots.

(a) Show that k satisfies $k^2 + 2k - 3 > 0$

(3)

(b) Find the set of possible values of k.

(4)

(Total for question = 7 marks)

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Q3.

The equation $x^2 + 3px + q = 0$, Where p is a non – zero constant , has equal roots. Find the values of p.

(5)

(Total for question = 5 marks)

Q4.

The equation $(k + 3)x^2 + 6x + k = 5$, where k is a constant, has two Distinct real solution for x,

(a) Show that k satisfies $k^2 - 2k - 24 <= 0$

(4)

(b) Hence find the set of possible values of k.

(3)

(Total for question = 7 marks)

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Q5.

Find the roots of the quadratic equation $6x^2 - x - 2 = 0$

(4)

(Total for question = 4 marks)

Q6.

Check whether the quadratic equation if $(x + 1)^2 = 2(x - 3)$

(4)

(Total for question = 4 marks)

Q7.

Find algebraically the solution set of the equation

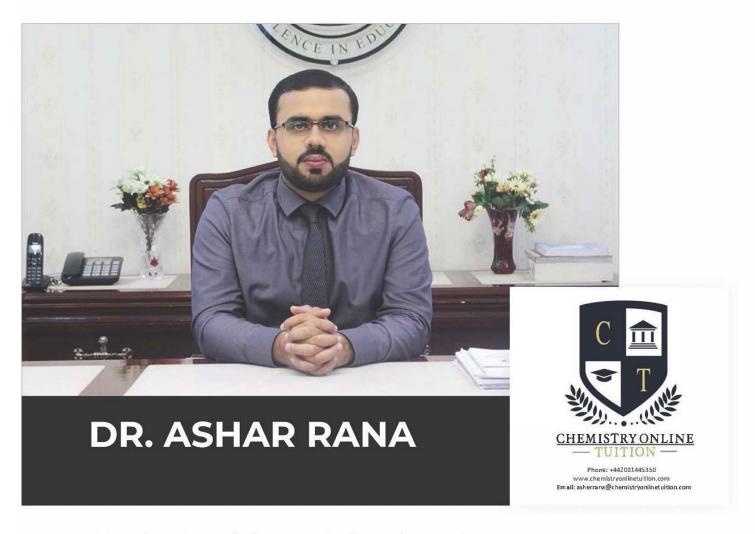$$|x^2 + 13x + 21| = 21$$

(5)

(Total for question = 5 marks)

Q8.

Solve for x if $3x^2 - 5x = 7$

(4)

(Total for question = 4 marks)

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