Q.1) Choose the correct alternatives for each of the following question's.   [5]

i) Which of the following is the root of a equation $x^2 +3x-4=0$?

    A) -2   B) -3   C) 1   D) 2

ii) What is the formula to form a quadratic equation if the roots are given.

    A) $x^2-(\alpha+\beta)x + (\alpha+\beta)=0$ B) $x^2-(\alpha+\beta)x +\alpha\beta=0$

    C) $x^2 - \alpha x + \beta=0$ D) $x-(\alpha+\beta)x +\alpha\beta=0$

iii) The sum of square of two consecutive natural number is 85. Find the numbers.

    A) 6 and 7   B) 7 and 8   C) -6 and 7   D) 8 and 9

iv) Find the value of discriminant of the equation $x^2 + 4x +2=0$

    A) 10   B) 16   C) 12   D) -12

v) Which of the following is a quadratic equation?

    A) $11= -4x^3 – 5$ B) $n = (n-1)$ C) $(y-2) (y+2)=10$ D) $x^2 +\frac{1}{x} = 5$

Q.2) Answer the following question's. [Any-4]   [8]

i) Solve the quadratic equation by factorization method: $x(2x+3)=35$

ii) If one root of quadratic equation $x^2 – 7x+K=0$ is 4, then find the value of K.

iii) Form the quadratic equation if its roots are $\frac{1}{2}$ and $\frac{-3}{4}$

iv) Find the value of discriminant $\sqrt{3}x^2+2\sqrt{2}x-2\sqrt{3}=0$

v) In the example given below determine whether the values given are the roots of the equation or not.

    $x^2+3x-4=0$; x= 1, -2

Q.3) Answer the following question's. [Any-3]   [9]

i) Solve the following quadratic equation by completing square: $6m^2+m=2$

ii) If α and β are the roots of the equation $x^2-5x+6=0$, find

  a) $\alpha^2+\beta^2$ b) $\alpha^3+\beta^3$ c) $\dfrac{\alpha}{\beta}+\dfrac{\beta}{\alpha}$

iii) Find the value of K for which given equation has real and equal roots

    $(k-12)x^2+2(k-12)x+2=0$.

iv) The sum of the square of two consecutive natural number is 113. Find the number.

Q.4) Solve the following question's. [Any-2]   [8]

 i) If the cost of bananas is increased by ₹ 1 per dozen, one can get 2 dozen less for ₹ 840.

   Find the original cost of one dozen of banana.

ii) Two taps together can fill a tank completely in $13\frac{1}{3}$ minutes. The smaller tap takes

   3 minutes more than the bigger tap to fill the tank. How much time does each tap

   take to fill the tank completely?

iii) The divisor and quotient of the number 6123 are same and the remainder is half

   the divisor . Find the divisor.

Best of luck.......

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