**Aarambh Classes**

**Class X**

**MATHS TEST**

**QUADRATIC EQUATIONS**

**TIME : 1 HOUR M.Marks : 25**

MCQ : (1 mark )

1. The least positive value of k ,for which the quadratic equation 2x +kx-4 =0 has rational roots ,is
2. 2 (b) 2 (c) 2 (d)
3. The value(s) of k for which the quadratic equation 2x +kx+2 =0 has equal roots ,is

(a) 4 (b) 4 (C) -4 (d) 0

Very short answer questions : (1 mark each )

1. Find the nature of roots of the quadratic equation 2x -4x+ 3 =0 .
2. For what values of ‘a’ the quadratic equation 9x-3ax +1=0 has equal roots ?
3. For what values of k ,the roots of the equation x +4x+k=0 are real ?

2 marks questions ;

1. Find the discriminant of the quadratic equation 4x-5 =0 and hence comment on the nature of roots of the equation .
2. Find the value of m for which the quadratic equation (m-1)x+2 (m-1)x +1 =0 has two real and equal roots .
3. If the quadratic equation (1+a)x+2abx +(b-c)=0 has equal and real roots ,then prove that b=c(1+a)

3 marks questions :

1. Find the value of ‘p’ for which the quadratic equation px(x-2) +6=0 has two equal roots .
2. If the roots of the quadratic equation (a-b)x +(b-c)x +(c-a) =0 are equal ,prove that 2a =b+c .
3. Find that non zero value of k for which the quadratic equation kx+1-2(k-1)x+x=0 has equal roots .Hence,find the roots of the equation .

5 mark question :

1. To fill a swimming pool two pipes are used .If the pipe of large diameter used for 4 hours and the pipe of smaller diameter for 9 hours ,only half of the pool can be filled .Find ,how long would it take for each pipe to fill the pool separately , if the pipe of smaller diameter takes 10 hours more than the larger diameter to fill the pool ?