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| **CLASS 10** |  **MATHEMATICS 041** |  |
| **QUESTION BANK** |  **CHAPTER::QUADRATIC EQUATIONS** |  |

1. Which of the following is not a quadratic equation
(a) x² + 3x – 5 = 0
(b) x² + x3 + 2 = 0
(c) 3 + x + x² = 0
(d) x² – 9 = 0

2. The quadratic equation has degree
(a) 0
(b) 1
(c) 2
(d) 3

3. The polynomial equation x (x + 1) + 8 = (x + 2) {x – 2) is
(a) linear equation
(b) quadratic equation
(c) cubic equation
(d) bi-quadratic equation

4. The quadratic equation whose one rational root is 3 + √2 is
(a) x² – 7x + 5 = 0
(b) x² + 7x + 6 = 0
(c) x² – 7x + 6 = 0
(d) x² – 6x + 7 = 0

5. The equation 2x² + kx + 3 = 0 has two equal roots, then the value of k is
(a) ±√6
(b) ± 4
(c) ±3√2
(d) ±2√6

6. The sum of the roots of the quadratic equation 3×2 – 9x + 5 = 0 is
(a) 3
(b) 6
(c) -3
(d) 2

7. Mohan and Sohan solve an equation. In solving Mohan commits a mistake in constant term and finds the roots 8 and 2. Sohan commits a mistake in the coefficient of x. The correct roots are

(a) 9,1
(b) -9,1
(c) 9, -1
(d) -9, -1

8. If a and p are the roots of the equation 2x² – 3x – 6 = 0. The equation whose roots are 1/α and 1/β is
(a) 6x² – 3x + 2 = 0
(b) 6x² + 3x – 2 = 0
(c) 6x² – 3x – 2 = 0
(d) x² + 3x-2 = 0

9.If the roots of px2 + qx + 2 = 0 are reciprocal of each other, then
(a) P = 0
(b) p = -2
(c) p = ±2
(d) p = 2

10.If one root of the quadratic equation 2x² + kx – 6 = 0 is 2, the value of k is
(a) 1
(b) -1
(c) 2
(d) -2

 2 MARKS QUESTIONS

11.  One year ago, a man was 8 times as old as his son. Now his age is equal to the square of

 his son’s age. Their present ages are.

12. The sum of the squares of two consecutive natural numbers is 313. The numbers are

13. The equation 12x² + 4kx + 3 = 0 has real and equal roots, if K=….

14. **Solve**x**2−45**x**+324=0.**

**15. Find two numbers whose sum is 27 and product is 182.**$ Type equation here.$

**16.  Find the value of k for which the quadratic equation** $kx^{2}+2x+1=0$ **has real and distinct**

 **root.**

**17. Find k for which the quadratic equation** $4x^{2}+3kx+1=0$ **has equal root.**

**18.** **Find the discriminant of the equation** $\left(x-1\right)\left(2x-1\right)=0$

 **3 MARKS QUESTIONS**

**19. The altitude of right triangle is 7 cm less than its base. If, hypotenuse is 13 cm. Find the other**

 **two sides.**

**20. Find two consecutive positive integers, sum of whose squares is 365.**

**21. The sum of two numbers is 16. The sum of their reciprocals is****. Find the numbers.**

**22. Solve for****:**

**23. Solve for x by factorization:**

**24. Find the ratio of the sum and product of the roots of**

**25. A cottage industry produces a certain number of pottery articles in a day. It was observed on a particular day that cost of production of each article (in rupees) was 3 more than twice the number of articles produced on that day. If, the total cost of production on that day was Rs. 90, find the number of articles produced and the cost of each article.**

 **4 MARKS QUESTIONS**

**26. The diagonal of a rectangular field is 60 metres more than the shorter side. If, the longer side is**

 **30 metres more than the shorter side, find the sides of the field.**

**27. The difference of squares of two numbers is 180. The square of the smaller number is 8 times**

 **the larger number. Find the two numbers.**

**28.  A train travels 360 km at a uniform speed. If, the speed had been 5 km/hr more, it would have**

 **taken 1 hour less for the same journey. Find the speed of the train.**

**29. Solve for by quadratic formula**$p^{2}x^{2}+\left(P^{2}-q^{2}\right)x-q^{2}$**.**

**30. Find the value of k so that**(x-1) **is a factor of**$k^{2}x^{2}-2kx-3$