CLASS X. 

Post-Test Examination, 1994.
Subjects - MATHEMATICS  
Topic - QUADRATIC EQUATION.
Full Marks - 30.  
Time - 30 Minutes.

(To be filled up by the Candidates)
Name of School :-
Name of Candidate :-
Class - Age:-  
Sex: Male/Female.
Community- Tribal/Non tribal.

Father's Occupation :-

INSTRUCTION TO CANDIDATES :-
[ While answering the Questions attempt seriously. Do not Waste time for a particular question. Put 'V' mark in the block given by the side of each Question. Remember, the Wrong marking leads to negative marking. Your mark will be kept Confidentially and it is used only for research purpose. ]

Q.NO.1. The general form of a Quadratic equation is :

(a) ax+b=0  
(b) ax+by+c=0  
(c) ax²+ bx + C =0  
(d) a₁x +b y + C=0  

\[ a₂x + b y + C=0 \]

(e) None of these.  

Q.NO.2. A Quadratic equation has

(a) One root  
(b) Two roots  
(c) Three roots  
(D) No root  
(E) None of these  

Q.NO.3. In the Equation \[ ax² + bx + c = 0 \] is called: 

(a) Discriminant  
(b) Coefficient  
(c) Leading coefficient  
(D) Quadratic term  
(E) None of these
Q.No.3. - In the Quadratic equation $AX^2+Bx+C=0$, $A$ is called

(a) a factor of $X^2$  
(b) a Coefficient of $X^2$  
(c) a Constant  
(d) a literal number  
(e) None of these

Q.No.4. The discriminant of a Quadratic equation $Ax^2+bx+C=0$ is

(a) $b^2-4ac$  
(b) $b^2+4ac$  
(c) $-b \pm \sqrt{b^2-4ac}$  
(d) $(-b \pm \sqrt{b^2-4ac})/2a$  
(e) None of these

Q.No.5. - In the Quadratic equation $X^2+5X+6=0$, the discriminant is equal to

(a) 1 . . .  
(b) -1 . . .  
(c) 25 . . .  
(d) Both of these  
(e) None of these

Q.No.6. - A Quadratic equation is of the form.

(a) $2X^2+3Y^2+6=0$  
(b) $2X^2+6X+7=0$  
(c) $2Y+6=0$  
(d) $2x+6x^2+5x+7x=0$  
(e) None of the above.

Q.No. 7. The solution of the equation $3X^2 - 2X+1=0$ is

(a) 1, 1  
(b) $-2+3$  
(c) $1, \frac{1}{3}$
Q.No.8. The Value of K when \( K^2 + 1 = 2K \) is

(a) \( 2^2 \) (A)
(b) 1 (B)
(c) -1 (C)
(d) \( \frac{-1}{2} \) (D)
(e) None (E)

Q.No.9. \((x-3)\) is one of the factors of

(a) \( x^2 - 3 \) (A)
(b) \( x^2 + 5x + 6 = 0 \) (B)
(c) \( x^2 + 7x + 12 = 0 \) (C)
(d) \( x^2 + 3 = 0 \) (D)
(e) None of these (E)

Q.No.10. In the equation \( x^2 - 5x + 6 = 0 \), the Coefficient of \( x^2 \) is

(a) 0 (A)
(b) 1 (B)
(c) 2 (C)
(d) 5 (D)
(e) 6 (E)

Q.No.11. The sum and product of the roots of the Quadratic equation \( 6x^2 - 11x + 3 = 0 \) is

(a) \( \frac{11}{6}, \frac{3}{6} \) (A)
(b) \( -\frac{11}{6}, -\frac{6}{3} \) (B)
(c) \( -\frac{3}{6}, -\frac{11}{6} \) (C)
(d) \( \frac{6}{3}, \frac{6}{11} \) (D)
(e) None of these (E)

Q.No.12. If 2 and 3 are the roots of the equation \( x^2 - 5x + 6 = 0 \) then it can be factorised as.

(a) \( x^2 - 5x + 6 = (x-2)(x-3) \) (A)
(b) \( x^2 - 5x + 6 = (x-2)(x+3) \) (B)
(c) \( x^2 - 5x + 6 = (x-2)(x+3) \) (C)
Q.13. The factors of $x^3 - 49 = 0$ is
(a) $(x - 7)(x - 7)$ (A)
(b) $(x - 7)(x - 7)$ (B)
(c) $(x - 49)(x + 49)$ (C)
(d) $(x + 7)^2$ (D)
(e) None of these. (E)

Q.14. The roots of the equation $x^3 - 5x + 6 = 0$ are
(a) 3, 2 (A)
(b) -3, -2 (B)
(c) 3, -2 (C)
(d) 2, -3 (D)
(e) None of these. (E)

Q.15. The solution of the Quadratic equation $(x - 4)(x - 2) = 0$ is
(a) 4, 2 (A)
(b) -4, -2 (B)
(c) 4, -2 (C)
(d) -4, +2 (D)
(e) None of these. (E)

Q.16. The degree of a Quadratic equation is:
(a) 1 ( )
(b) 2 ( )
(c) 0 ( )
(d) None. ( )

Q.17. If the discriminant of a Quadratic equation is greater than and equal to Zero, the equation has:
(a) equal roots. ( )
(b) Real and equal roots. ( )
(c) Imaginary roots. ( )
(d) Real and unequal roots. ( )
(e) None of these. ( )
Q.No.18. If \( X(X+3)=0 \), its roots are

(a) 0, 0
(b) -3
(c) 0 and -3
(d) -3, +3
(e) None of these.

Q.No.19. Fill up the blank in the following so as to make the statement true:

(a) \((X+4) ( \quad ) = Xx - 16\).
(b) \((X-5) (X-6) = \underline{\quad \quad} \).
(c) \((X-13) ( \quad ) = X^2 - 3\).
(d) \((X^2 - 0) (7) = 7-X^2\)
(e) \((X-2)(X-3) = \underline{\quad \quad} \).

Q.No.20. The quadratic equation \( X^2 - 14X + 49 = 0 \) has real and equal roots if:

(a) \(D\leq0\)
(b) \(D>0\)
(c) \(D<0\)
(d) \(D\geq0\)
(e) None

Q.No.21. \( X^2 - 25 = 0 \) is a ...........Quadratic equation.

(a) Pure
(b) Ordinary
(c) Andfact.
(d) Mixed but pure.
(e) None.

Q.No.22. The sum of a number and its reciprocal is Then the number is:

(a) \(4, \frac{1}{4}\)
(b) \(8, \frac{1}{5}\)
(c) \(-8, -\frac{1}{8}\)
(d) \(-4, -\frac{1}{4}\)
(e) None of these.
Q.No. 23. If the sum of the age of Ramu and his brother is 18 years and the product of their ages is 72 years, Ramu's present age is

(a) 6 years  ( )
(b) 12 years  ( )
(c) 18 years  ( )
(d) 4 years  ( )
(e) None of these.  ( )

Q.No. 24. The Complete Quadratic equation is

(a) ax+by+C = 0  ( )
(b) ax^2+by+C = 0  ( )
(c) ax^2+b = 0  ( )
(d) ax^2+b = 0  ( )
(e) None of these.  ( )

Q.No. 25. The length of a rectangular plot of land is 8 m. greater than its breadth and if area is 240 sq. m; then dimensions of the land is:

(a) L= 12 m, B = 20 m  ( )
(b) L=20 m, B = 12 m  ( )
(c) L= 6 m, B=40 m  ( )
(d) L=10 m, B = 24 m  ( )
(e) None of these.  ( )

Q.No. 26. The discriminant of the equation AX^2+Bx+C=0 is

(a) b^2-4ac  ( )
(b) A^2-4BC  ( )
(c) B^2-4AC  ( )
(d) \sqrt{B^2-4AC}  ( )
(e) None  ( )

Q.No. 27. The roots of Quadratic equation PX^2+Qx+V=0 is real and equation is real and equal if

(a) P^2-4Qr > 0  ( )
(b) p^2-4qr=0  ( )
(C) Q^2-4pr=0  ( )
(d) Q^2-4pr<0  ( )
(e) None of these.  ( )
Q.No.28. The roots of a quadratic equation
\[ ax^2+bx+c=0 \]
are such that
\[ \alpha + \beta = -b \quad \text{and} \quad \alpha \beta = c, \]
then form the equation as
(a) \( ax^2+bx+c = 0 \)
(b) \( ax^2 + c = 0 \)
(c) \( x^2 + (\alpha + \beta)x + \alpha \beta = 0 \)
(d) \( x^2 + x(\alpha + \beta) + \alpha \beta = 0 \)
(e) None of these.

Q.No.29. If 2 and 1 are the roots of a quadratic equation, then the equation is
(a) \( x^2+3x+2=0 \)
(b) \( x^2+2x+3=0 \)
(c) \( 2x^2+x+3=0 \)
(d) \( \alpha + (\alpha + \beta)x + \alpha \beta = 0 \)
(e) None.

Q.No.30. The maximum number of roots of a quadratic equation is
(a) 1
(b) 2
(c) 0
(d) 3
(e) None.