Daily Attendance Register

Class 10th Section Navy

Days of 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

CLASS – 10th
MONTHLY TEST
SUBJECT – MATHEMATICS

Time: 1 HOUR 30 min. M.M: 43

Q.1 If the pair of equations $3x - y + 8 = 0$ and $6x - ky + 16 = 0$ represent coincident lines, then the value of 'k' is

(a) $-1/2$ (b) $1/2$ (c) -2 (d) 2

Q.2 If p is a root of the quadratic equation $x^2 - (p+q)x + k = 0$, then the value of k is

(a) p (b) q (c) $p+q$ (d) pq

Q.3 The roots of the equation $x^2 + 3x - 10 = 0$ are

(a) 2, -5 (b) -2, 5 (c) 2, 5 (d) -2, -5

Q.4 The real roots of the equation $x^{\frac{2}{3}} + x^{\frac{1}{3}} - 2 = 0$ are

(a) 1, -8 (b) -1, 8 (c) 1, -2 (d) -2, 1

Q.5 The quadratic equation $x^2 - 4x + k = 0$ has distinct real roots iff

(a) $k = 4$ (b) $k > 4$ (c) $k < 4$ (d) $k = 6$

Q.6 For what value of 'a' quadratic equation $3ax^2 - 6x + 1 = 0$ has no real roots

(a) $a > 2$ (b) $a > 3$ (c) $a < 3$ (d) $a < 4$

Q.7 The pair of linear equation $x + 2y = 5$ and $3x + 12y = 10$ has

(a) Unique solution (b) No soln (c) more than two soln (d) Infinite many soln.

Q.8 The value of p and q for which the system of eqn has infinite many solution: $2x + 3y = 7$ & $(p+q)x + (2p-q)y = 21$

(a) $p = 4, q = 3$ (b) $p = 1, q = 5$ (c) $p = 5, q = 1$ (d) $p = 3, q = 4$

Q.9 Assertion:- The pair of eqns $x + 2y + 5 = 0$ & $-4x - 8y + 1 = 0$ have no solution

Reason:- If a pair of linear eqn $a_1x + b_1y + c_1 = 0$ & $a_2x + b_2y + c_2 = 0$ represent intersecting lines then $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$.

Q.10 Assertion:- The quadratic equation $9x^2 + 3kx + 4 = 0$ has equal roots for $k = \pm 4$

Reason:- If the $D = 0$ then roots are real and equal.

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Q.11 If the system of equation $2x+3y=7$ and $2ax+(a+b)y=28$ have infinite number of solution, then find the values of 'a' and 'b'. (2)

Q.12 The sum of two numbers is 105 and their difference is 45. Find the numbers. (2)

Q.13 If $49x+51y=499$ and $51x+49y=501$. Find the value of x and y. (2)

Q.14 Solve for x: $\frac{1}{(x-1)(x-2)} + \frac{1}{(x-2)(x-3)} = \frac{2}{3}$; $x \neq 1,2,3$ (2)

Q.15 Solve for x: $4x^2+4bx-(a^2-b^2)=0$ (2)

Q.16 Find the value of m for which the quadratic equation $(m-1)x^2 + 2(m-1)x + 1 = 0$ has two real and equal roots. (2)

Q.17 A motorboat whose speed is 24 km/hr in still water takes 1 hour more to go 32 km upstream than to return downstream to the same spot. Find the speed of stream. (3)

Q.18 The present age of a Father is 3 years more than three times the age of his son. Three years hence the father's age will be 10 years more than twice the age of the son. Determine their present age. (3)

Q.19 A fraction becomes $\frac{1}{3}$ when 2 is subtracted from the numerator and it becomes $\frac{1}{2}$ when 1 is subtracted from the denominator. Find the fraction. (3)

Q.20 The area of a rectangle gets reduced by 9 sq. units, if its length is reduced by 5 units & breadth is increased by 3 units. If we increase the length by 3 units and breadth by 2 units the area increases by 67 sq. units. Find the dimensions of the rectangle. (3)

Q.21 The age of a man is twice the square of the age of his son. Eight years hence, the age of the man will be 4 years more than three times the age of his son. Find their present ages. (3)

Q.22 ₹ 9000 were divided equally among a certain number of persons. Had there been 20 more persons, each would have got ₹ 160 less. Find the original number of Persons. (3)

Q.23 A 2-digit number is seven times the sum of its digits. The number formed by reversing the digits is 18 less than the given number. Find the given number. (3)

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