

LITTLE FLOWER CONVENT HIGH SCHOOL

STD	SUBJECT	EXAM	DATE	MARKS
X	MATHS-1	II-PRELIM:2021-22	21-02-22	50

Q.I] Choose the correct answers for the following and write the letter of the alphabet of it: [10 M]

1] Value of the following determinant is ?

$$N = \begin{vmatrix} -8 & -3 \\ 2 & 4 \end{vmatrix}$$

- A] 26 B] -26 C] -38 D] 38

2] Degree of quadratic equation is always.....

- A] 1 B] 2 C] 3 D] 4

3] In an A.P. 3,6,9,12,... the common difference d is.....

- A] 3 B] -3 C] 2 D] -2

4] Which of the following number cannot represent a probability ?

- A] 0.25 B] 0.15 C] 0.2 D] 1.2

5] For the equations with variables m and n , $D_m = -14$, $D_n = -28$ and $D = 14$, then $n = ?$

- A] -1 B] 1 C] 2 D] -2

6] What is the value of discriminant for the quadratic equation : $y^2 - 14y + 13 = 0$?

- A] 258 B] 158 C] 144 D] 12

7] In an A.P. 9, 15, 21, 27,... Find t_5

- A] 27 B] 29 C] 31 D] 33

8] If $n(S) = 10$, $P(A) = \frac{1}{2}$, then $n(A) = ?$

- A] 5 B] 6 C] 20 D] 15

9] To draw the graph of $2x - y = 2$, if $x = 3$ is taken, then what will be the value of y ?

- A] 2 B] -2 C] 4 D] -4

10] If one of the roots of quadratic equation $x^2 - kx - 15 = 0$ is -3 , then find the value of 'k'

- A] -2 B] 2 C] $\frac{1}{2}$ D] $-\frac{1}{2}$

Q.II. Solve the following subquestions : (Each question carries 1 mark) -

[11 marks]

1] Show the following condition using the variables 'a' and 'b' :

Sum of two numbers is 25.

2] Write the given quadratic equation in standard form :

$$3p^2 - 4 = 2p$$

3] If $\Delta > 0$, then write the nature of the roots.

4] Write an A.P. whose first term is 'a' and common difference is 'd'

$$a = 6, d = -3$$

5] Find next two terms of A.P. 5, 12, 19, 26,

6] Find the values of a and b, by comparing the given quadratic equation $3x^2 - 4x + 8 = 0$

$$\text{with } ax^2 + bx + c = 0$$

7] A die is rolled. Write the sample space "S"

8] Write the formula used to solve the quadratic equation with variable x.

9] Find $P(A)$, if $n(A) = 7$, $n(S) = 28$.

10] If the quadratic equation has real and equal roots, then what should be

$$b^2 - 4ac = ?$$

11] If $x + 2y = 5$ and $2x + y = 7$ then find the value of $x+y$

Q.III. Solve the following subquestions : (Each question carries 2 marks) -

[20 marks]

- 1] If $t_n = 3n - 3$ in a sequence, find $t_8 = ?$
- 2] Write a sample space and number of sample points when two coins are tossed simultaneously.
- 3] Find S_{12} , if $t_1 = 4$ and $t_{12} = 48$
- 4] Find the roots of : $(m-13)(m-1) = 0$
- 5] A bag contains 50 cards. Each card bear only one number from 1 to 50. One card is drawn at random. If $S = \{1, 2, 3, \dots, 49, 50\}$, write event 'A' and $n(A)$.
condition for event A : the number on the card is divisible by 6
- 6] Write an A.P. for natural numbers from 10 to 250 that are divisible by 4.
- 7] Add the given simultaneous equations and find the value of y :

$$x + y = 1 ; -x + y = 5$$

- 8] Frame the linear equations from the information below :
(Let the greater number be x and smaller number be y)
Two numbers differ by 3.
The sum of twice the smaller number and thrice the greater number is 19.
- 9] If for an A.P. $t_2 = 6$ and $d = 2$, then what is the value of $a = ?$
- 10] Write the sample space (S) and $n(S)$ for the following :
A two digit number is formed from the digits 0, 1, 2, 3, 4.
Repetition of the digits is allowed.

Q.IV. Solve the following subquestions : (Each question carries 3 marks) -

[9 marks]

- 1] Solve the quadratic equation by factorization method :
$$x^2 - 15x + 54 = 0$$
 - 2] Find the 19th term of the following A.P. 7, 13, 19, 25, ...
 - 3] If one die is rolled, then find the probability of : Number on the upper face is prime.
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