EDUTECH ACADEMY
NURTURING THE FUTURE...
— Classes 5 to 10 —

SET A

N 926

Seat No. | | | | | | | |

2025 XII 26 1100 – N 926 – MATHEMATICS (71) GEOMETRY – PART I (E)

(NEW COURSE)

Time : 2 Hours **(Pages 6)** **Max. Marks : 40**

Note :- (i) All questions are compulsory.
(ii) Use of calculator is not allowed.
(iii) Total marks are shown on the right side of the question.

Q.1 (A) Choose the correct alternative: **4**

(1) Which pair of linear equations have x = 2 and y = – 3 as solution?

(a) x + y = –1 ; 2x – 3y = –5 (b) 2x + 5y = –11 ; 4x + 10y = 22

(c) 2x – y = 1 ; 3x + 2y = 0 (d) x – 4y –14 = 0 ; 5x – y – 13 = 0

(2) GST system was introduced in our country from . . .

(a) 31st March 2017 (b) 1st April 2017

(c) 1st January 2017 (d) 1st July 2017

(3) The roots of the quadratic equation $ax^2 + bx + c = 0$ are calculated using formula

a) $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

b) $x = \frac{-b \pm \sqrt{b^2 + 4ac}}{a}$

c) $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{a}$

d) $x = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$

(4) A mark  is called

(a) Frequency mark (b) Unknown mark (c) krink mark (d) Axis mark

(B) Solve the following: **4**

(1) Find the median of a median class 30-50 of 50 students' marks, with cumulative frequency of preceding class as 20 and frequency of the median class is 10

(2) Write the next 3 terms from the following A. P: 1, 8, 15, 22, . . .

(3) Solve the following quadratic equation by factorisation: $m^2 - 11 = 0$

(4) If you want to purchase 50 shares of MV Rs. 50 each. What is the total amount to be paid?

Q.2(A) Complete the following activities:(Any TWO) **4**

(1) If α and β are the roots of the quadratic equation $2x^2 + 6x - 5 = 0$, then find (α + β) and α x β.

Comparing $2x^2 + 6x - 5 = 0$ with $ax^2 + bx + c = 0$.

$\therefore\ a = 2,\ b = \square,\ c = -5$

$\therefore\ \alpha + \beta = -\frac{b}{a} = \frac{\square}{\square} = \square$

and $\alpha \times \beta = \frac{c}{a} = \square$

(2) Fill in the blanks with correct number

$$\begin{vmatrix} 3 & 2 \\ 4 & 5 \end{vmatrix} = 3 \times \square - \square \times 4 = \square - 8 = \square$$

(3) Write sample space 'S' and number of sample point n(S) for each of the following experiments. Also write events A, B, C in the set form and write n(A), n(B), n(C):
One coin and one die are thrown simultaneously.
Condition for event A : To get head and an odd number.
Condition for event B : To get a head or tail and an even number.
Condition for event C : Number on the upper face is greater than 7 and tail on the coin.

Experiment is to throw a dice and a coin simultaneously

$S = \{H1, H2, H3, H4, H5, H6, T1, T2, T3, T4, T5, T6\}$

$n(s) = \square$

Condition for event A→ to get head or tail and an odd number

$A = \{H1, \square\ H5\}$

$n(A) = 3$

Condition for event B → To get head or tail and an even number

B = {H2, H4, H6, T2, T4, T6}

n (B) = ☐

Condition for event C → Number on upper face is greater than 7 and tail on the coin

C = { }

n (c) = ☐

(B) Solve the following: (Any FOUR) **8**

(1) Find the mean of the data given in the following table.

Class	0-20	20-40	40-60	60+80	80-100
Frequency	6	4	5	7	3

(2) Find the value of the determinant:

$$\begin{vmatrix} \frac{7}{3} & \frac{5}{3} \\ \frac{3}{2} & \frac{1}{2} \end{vmatrix}$$

(3) If one die is rolled then find the probability of each of the following events.

(i) Number on the upper face is prime

(ii) Number on the upper face is even.

(4) Solve : $x^2 + 8x - 48 = 0$

(5) Find the mode for the following data.

Distance (in km)	Number of people
2 – 10	3
10 – 18	8
18 – 26	5
26 – 34	4
34 – 42	5

Q.3 (A) Complete the following activity:(Any ONE) **3**

(1) The maximum temperatures in °C of 30 towns, in the last summer, is shown in the following table. Find the mean of the maximum temperatures.

Max. temp.	24 - 28	28 - 32	32 - 36	36 - 40	40 – 44
No. of towns	4	5	7	8	6

Class (Temp. °C)	Class mark x_i	Frequency (No. of towns) f_i	Class mark × frequency $x_i f_i$
24–28	26	4	104
28–32	30	☐	150
32–36	34	7	☐
36–40	38	8	304
40–44	42	6	252
Total		$N = \sum f_i =$ ☐	$\sum x_i f_i =$ ☐

Mean = $\overline{X} = \frac{\sum x_i f_i}{\sum f_i} =$ ☐ = ☐

(2) Joseph purchased following shares, Find his total investment.

Company A : 200 shares, FV = Rs. 2 Premium = Rs. 18.

Company B : 45 shares, MV = Rs. 500

Company C : 1 share, MV = Rs. 10,540.

Company A : 200 shares, FV = Rs. 2 Premium
= Rs. 18.
Company B : 45 shares, MV = Rs. 500
Company C : 1 share, MV = Rs. 10,540.
Company A: 200 shares FV = Rs. ☐
Premium = Rs. 18
MV = FV + Premium
= Rs. 2 + 18
= Rs. ☐
Sum invested = No. of shares x MV
= Rs. 200 x 20
= Rs. ☐ ..... (I)
Company B: 45 shares MV = Rs. 500
Sum invested = No. of shares MV = Rs. 500
Sum invested = No. of shares x MV
= Rs. 45 x 500
= Rs. ☐ .....(II)
Company C: 1 share, MV = Rs. 10540
Sum invested = No. of shares x MV

= Rs. 45 x 500
= Rs. ☐ .....(II)
Company C: 1 share, MV = Rs. 10540
Sum invested = No. of shares x MV
= 1 x Rs. 10540
= Rs. 10540 .....(III)
Adding (I), (II) and (III) to obtain total investment
Total investment = Rs. (4000 + ☐ + 10540)
= Rs. ☐

(B) Solve the following: (Any TWO) **6**

(1) The 11th term and the 21st term of an A.P. are 16 and 29 respectively, then find the 41th term of that A.P.

(2) Solve the following quadratic equation by factorisation:

$$2x^2 - 2x + \frac{1}{2} = 0$$

(3) Write sample space 'S' and number of sample point n(S) for each of the following experiments. Also write events A, B, C in the set form and write n(A), n(B), n(C): Two digit numbers are formed using digits 0, 1, 2, 3, 4, 5 without repetition of the digits.

Condition for event A : The number formed is even

Condition for event B : The number formed is divisible by 3.

Condition for event C : The number formed is greater than 50.

(4) A share is sold for the market value of Rs. 1000. Brokerage is paid at the rate of 0.1%. What is the amount received after the sale ?

Q.4 Solve the following: (Any TWO) **8**

(1) Anvar saves some amount every month. In first three months he saves Rs. 200, Rs. 250 and Rs. 300 respectively. In which month will he save Rs. 1000?

(2) Two places A and B are 80 km apart from each other. The cars start from A and B. Suppose the speed of car starting from A is greater than the speed of car starting from B. If they move in the same direction at the same time, they meet in 8 hours and if they move in opposite direction, they meet in 1 hour and 20 minutes. Find the speed of the cars.

(3) The table below shows the yield of jowar per acre. Show the data by histogram.

Yield per acre (quintal)	2 - 3	4 - 5	6 - 7	8 - 9	10 – 11
No. of farmers	30	50	55	40	20

Q.5 Solve the following: (Any ONE) **3**

(1) A rectangular park is to be designed whose breadth is 3m less than its length. Its area is to be 4 squares meters more than the area of a park that has already been made in the shape of an isosceles triangle with its base as the breadth of the rectangular park and altitude 12.

a) Find its quadratic equation.

b) Find its length

c) Find its breadth

(2) Convert the following equations into simultaneous equations and solve :

$$\sqrt{\frac{x}{y}} = 4,\ \frac{1}{x} + \frac{1}{y} = \frac{1}{xy}$$

....All The Best....