

**Note:-**

**Q.1 A) Solve Multiple choice questions.**

**(4)**

1) On comparing  $6x^2 + 11x - 35 = 0$  with  $ax^2 + bx + c = 0$ . We get a, b and c as :

- |                             |                              |
|-----------------------------|------------------------------|
| a. $a = 11, b = 6, c = 35$  | b. $a = 6, b = 11, c = 35$   |
| c. $a = 6, b = 11, c = -35$ | d. $a = 35, b = 11, c = -35$ |

2) In an A.P. if  $d = -4, n = 7, t_n = 4$ , then a is

- a. 6      b. 7      c. 20      d. 28

3) GST system was introduced in our country from .....

- |                     |                   |
|---------------------|-------------------|
| a. 31st March 2017  | b. 1st April 2017 |
| c. 1st January 2017 | d. 1st July 2017  |

4) How many solutions are there for linear equation in two variables?

- a. One      b. Two      c. Three      d. Infinite solutions

**B) Solve the following questions.**

**(4)**

1) Write an A.P. whose first term is a and common difference is d in each of the following.

$a = -7, d = \frac{1}{2}$

2) Mr. Azhar paid 28% GST on spare parts of motor cycle worth Rs. 20,000 and sold to a customer for Rs. 25,000. What are the amounts of CGST and SGST shown in the tax invoice issued ?

3) Find the value of discriminant for each of the following equations.

$5m^2 - m = 0$

4) Two coins are tossed simultaneously, Find the probability of getting at least one head.

**Q.2 A) Complete the following Activities. (Any Two)**

**(4)**

1) Fill up the boxes and find out the number of terms in the A. P. 1, 3, 5, ....., 149.

|  |             |
|--|-------------|
| Here $a = 1, d = \underline{\hspace{2cm}}$ ,     | $t_n = 149$ |
| $t_n = a + (n - 1) d$                            |             |
| $\therefore 149 = \underline{\hspace{2cm}}$      |             |
| $149 = 1 + 2n - 2$                               |             |
| $\therefore 149 = 2n - \underline{\hspace{2cm}}$ |             |
| $\therefore 2n = 150$                            |             |
| $\therefore n = \underline{\hspace{2cm}}$        |             |

2) Out of 200 students from a school, 135 like Kabbaddi and the remaining students do not like the game. If one student is selected at random from all the students, find the probability that the student selected doesn't like Kabbaddi.

Let S be the sample space.  
Total number of students = 200

$\therefore n(S) = \underline{\hspace{2cm}}$

Number of students like Kabbaddi = 135

$\therefore$  Number of students doesn't like Kabbaddi

= 200 - 135

=  $\underline{\hspace{2cm}}$

Event A : The student selected doesn't like Kabbaddi.

$\therefore n(A) = 65$

$P(A) = \underline{\hspace{2cm}}$

$\therefore n(A) = \frac{65}{200}$

=  $\frac{13}{40}$

$\therefore$  Probability of selected students doesn't like kabbaddi is  $\underline{\hspace{2cm}}$

3) Complete the following table to draw the graph of  $3x - y = 2$

|        |                      |                      |
|--------|----------------------|----------------------|
| x      | <input type="text"/> | - 1                  |
| y      | 1                    | <input type="text"/> |
| (x, y) | <input type="text"/> | <input type="text"/> |

B) Solve the following questions. (Any four)

(8)

1) Form the given table, find the median size of a farm.

| Size of farm (in acres) | Number of farms | c.f. (less than type) |
|-------------------------|-----------------|-----------------------|
| 15 - 25                 | 5               | 5                     |
| 25 - 35                 | 10              | 5 + 10 = 15           |
| 35 - 45                 | 20              | 15 + 20 = 35          |
| 45 - 55                 | 9               | 35 + 9 = 44           |
| 55 - 65                 | 6               | 44 + 6 = 50           |

2) For each of the following experiments write sample space 'S' and number of sample points n(S).  
One coin and one die are thrown simultaneously.

3) The  $n^{\text{th}}$  term of the A. P. 3, 8, 13, 18, ..... is 148. Find n

4) Find the values of a, b, c for following quadratic equations by comparing with standard form.  
 $y^2 = 7y$

5) For certain simultaneous equations, if

i.  $D = -5, D_x = 15, D_y = 10$

ii.  $D = 4, D_x = 2, D_y = 8$

find the values of x and y.

Q.3 A) Complete the following Activity (Any one)

(3)

1) If the face value of the share is Rs. 100 and market value is Rs. 150. Let the rate of brokerage be 0.5%.  
What amount should one pay for purchasing 100 such shares? What amount should one receive after selling 100 such shares?

I) At the time of buying shares:

$$\begin{aligned}\text{Buying price of 1 share} &= \text{MV} + \text{Brokerage} \\ &= 150 + 0.5\% \text{ of } 150 \\ &= 150 + 0.75 \\ &= \underline{\hspace{2cm}}\end{aligned}$$

If someone purchases 100 such shares the total cost is  $100 \times 150.75 = \text{Rs. } 15075$ .

Here  $\underline{\hspace{2cm}}$  is the share price and  $\underline{\hspace{2cm}}$  is the brokerage paid.

II) At the time of selling shares.

$$\begin{aligned}\text{Selling price per share} &= \underline{\hspace{2cm}} \\ &= 150 - 5\% \text{ of } 150 = 150 - 0.75 \\ &= \underline{\hspace{2cm}}.\end{aligned}$$

If someone sells 100 such shares, he will get,

$$100 \times 150 - \text{Rs. } 75 = \underline{\hspace{2cm}} \text{ after selling 100 such shares.}$$

- 2) Write the sample space S, and number of sample points 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 die is rolled.

$$\therefore \text{ the sample space } S = \{ \underline{\hspace{2cm}} \}$$

$$n(S) = \underline{\hspace{2cm}}$$

Event A : Even number on the upper face.

$$\therefore A = \{ \underline{\hspace{2cm}} \}$$

$$\therefore n(A) = 3$$

Event B : Odd number on the upper face.

$$\therefore B = \{ \underline{\hspace{2cm}} \}$$

$$\therefore n(B) = 3$$

Event C :  $\underline{\hspace{2cm}}$ .

$$\therefore C = \{2, 3, 5\}$$

$$\therefore n(C) = \underline{\hspace{2cm}}$$

**B) Solve the following questions. (Any two)**

**(6)**

- 1) Solve :  $7y = -3y^2 - 4$
- 2) Mr. Rohit is a retailer. He paid GST of Rs. 6500 at the time of purchase. He collected GST of Rs. 8000 at the time of sale. (i) Find his input tax and output tax. (ii) What is his Input tax credit ? (iii) Find his payable GST. (iv) Hence find the payable CGST and payable SGST.
- 3) Three years hence a man's age will be three times his son's age and 7 years ago he was seven times as old as his son. How old are they now?
- 4) Draw a pie diagram to represent the world population of countries given in the following table after determining the value of

| Country                  | India | China | Russia | USA | Other | Total |
|--------------------------|-------|-------|--------|-----|-------|-------|
| Percentage of population | 15    | 20    | a      | a   | 25    | 100   |

**Q.4 Solve the following questions. (Any two)**

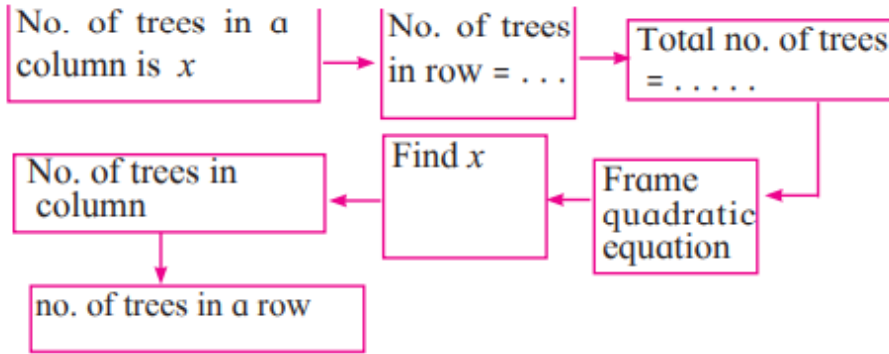
**(8)**

- 1) Solve the following simultaneous equations graphically.  
 $3x - y = 2$  ;  $2x - y = 3$

- 2) A frequency distribution of funds collected by 120 workers in a company for the drought affected people are given in the following table. Find the mean of the funds by 'step deviation' method.

| Fund (Rupees)  | 0 - 500 | 500 - 1000 | 1000 - 1500 | 1500 - 2000 | 2000 - 2500 |
|----------------|---------|------------|-------------|-------------|-------------|
| No. of workers | 35      | 28         | 32          | 15          | 10          |

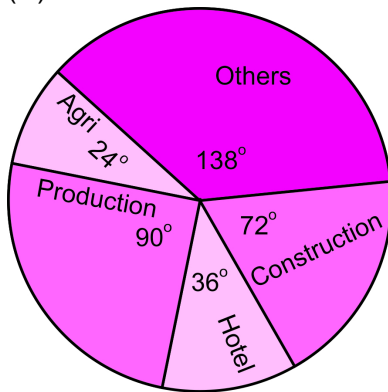
- 3) In the orange garden of Mr. Madhusudan there are 150 orange trees. The number of trees in each row is 5 more than that in each column. Find the number of trees in each row and each column with the help of following flow chart.



**Q.5 Solve the following questions. (Any one)**

**(3)**

- 1) As deduced from a survey, the classification of skilled workers is shown in the pie diagram. If the number of workers in the production sector is 4500, answer the following questions.
- What is the total number of skilled workers in all fields?
  - What is the number of skilled workers in the field of constructions?
  - How many skilled workers are in agriculture?
  - Find the difference between the numbers of workers in the field of production and construction.



- 2) Divide 207 in three parts, such that all parts are in A.P. and product of two smaller parts will be 4623.