

**Instruction**

- i) All questions are compulsory.**  
**ii) Use of calculator is not allowed.**

**Q.1A Solve Any Four of the following**

[4]

- 1) If  $\frac{a}{b} = \frac{7}{2}$ , then find  $\frac{a+b}{a-b}$ .
- 2) If  $(9\sqrt{3} + 8\sqrt{5}) - (4\sqrt{5} - 3\sqrt{3}) = a\sqrt{3} + b\sqrt{5}$ , then find a and b.
- 3) Mr. Kulkarni is 36 years old. His taxable income is Rs. 3,27,000. Will he have to pay income tax?
- 4) Find the median of the given observations.  
59, 75, 68, 70, 74, 75, 80.
- 5) Write the following set in roster form: Set of even numbers.
- 6) For the polynomial  $mx^2 - 2x + 3$  if  $p(-1) = 7$ , then find m.

**Q.1B Solve Any TWO of the following:**

[4]

- 1) If  $A = \{a, b, c, d, e\}$ ,  $B = \{c, d, e, f\}$ ,  $C = \{b, d\}$ ,  $D = \{a, e\}$ , then which of the following statements are true and which are false?  
i)  $A \subseteq D$                       ii)  $C \subseteq A$
- 2) **Write the equations in two variables required to solve the following problem.**  
The price of 3 chairs and 2 tables is Rs. 4500 and price of 5 chairs and 3 tables is Rs. 7000, then find the price of 2 chairs and 2 tables.
- 3) The mean of five numbers is 50, out of which mean of 4 numbers is 46, find the 5<sup>th</sup> number.

**Q.2A Choose the correct alternative:**

[4]

- 1) The NAV of a unit in mutual fund scheme is Rs. 10.65, then find the amount required to buy 500 such units.  
A) 5325                      B) 5235                      C) 532500                      D) 53250
- 2) If  $\alpha$  and  $\beta$  are the roots of the quadratic equation  $x^2 - 3x - 2 = 0$ , then  $\frac{1}{\alpha} + \frac{1}{\beta} =$   
A)  $\frac{3}{2}$                       B)  $\frac{-3}{2}$                       C)  $\frac{13}{2}$                       D)  $\frac{-13}{2}$
- 3) First four terms of an A.P. are....., whose first term is  $-2$  and common difference is  $-2$   
A)  $-2, 0, 2, 4$                       B)  $-2, 4, -8, 16$                       C)  $-2, -4, -6, -8$                       D)  $-2, -4, -8, -16$
- 4) Cumulative frequencies in a grouped frequency table are useful to find \_\_\_\_\_.  
A) Mean                      B) Median                      C) Mode                      D) All of these

**Q.2B Solve Any TWO of the following**

[4]

- 1) 'M/s. Real Paint' sold 2 tons of luster paint and taxable value of each tin is Rs. 2800. If the rate of GST is 28%, then find the amount of CGST and SGST charged in the tax invoice.
- 2) Find the sum of all odd numbers from 1 to 150.
- 3) If for an A.P. the first term is 3 and the common difference is 6 then find  $S_n$  and hence find  $S_{10}$ .

**Q.3A Complete any TWO of the following activities:**

[4]

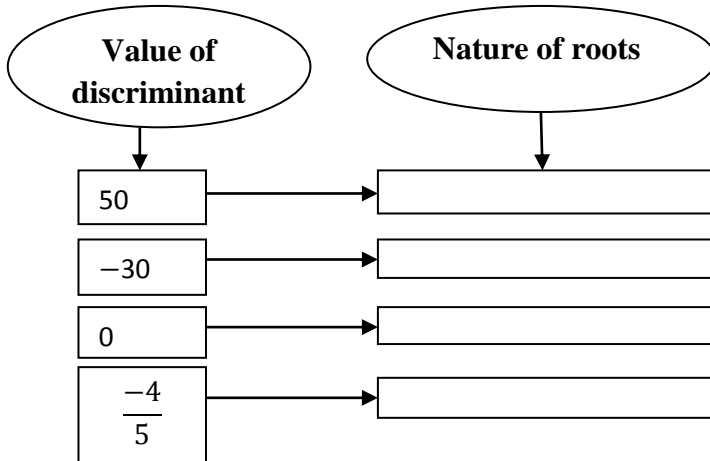
- 1) Complete the following table to draw graph of the equations.

$2x - 3y = 4$		$3y - x = 4$	
<b>x</b>		-1	5
<b>y</b>	0		
<b>(x, y)</b>			

<b>x</b>	2		5
<b>y</b>		0	

(x, y)			
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2) Fill in the blanks.



3) When 2 coins are tossed simultaneously, what are all possible outcomes? In a single throw of 2 coins, what is the probability of getting (i) both heads? (ii) at least one head? Using this information complete the following. When two coins are tossed simultaneously, all possible outcomes are

- ∴ total number of all possible outcomes =
- a) Getting both the heads means =
- ∴ P(getting both heads) =
- b) Getting at least 1 head means =
- ∴ P(getting at least 1 head) =

**Q.3B Solve Any TWO of the following**

[4]

- 1) Smt. Deshpande purchased shares of FV Rs. 5 at a premium of Rs. 20. How many shares will she get for Rs. 20,000?
- 2) If a coin is tossed three times, then find the probability of:
  - i) getting head on the middle coin
  - ii) getting exactly one tail
- 3) Solve the following simultaneous equations using Cramer's rule.  
 $3x - 4y = 10$ ;  $4x + 3y = 5$

**Q.4 Solve Any THREE of the following**

[9]

- 1) In an A.P. 19<sup>th</sup> term is 52 and 38<sup>th</sup> term is 128, find sum of first 56 terms.
- 2) Basketball players John, Vasim, Akash were practicing the ball drop in the basket. The probabilities of success for John, Vasim and Akash are  $\frac{4}{5}$ , 0.83 and 58% respectively. Who had the greatest probability of success?
- 3) Raju went to a stationary shop and purchased 2 pencils and 3 erasers for Rs. 9. Sanju bought 4 pencils and 6 erasers of the same kind for Rs. 18. Represent this situation algebraically and graphically.
- 4) Prepare Business – Business (B2B) Tax Invoice as per the details given below.  
 Name of the supplier, address, Date etc. as per your choice.  
 Supplier – Name, address, state GST IN, Invoice no. Date.  
 Recipient – Name, address, state GSTIN  
 Items (1) Pencil boxes 100, HSN 3924, Rate Rs. 20, GST 12%  
 (2) Jigsaw Puzzles 50, HSN 9503, Rate Rs. 100, GST 12%

**Q.5 Solve Any ONE of the following**

[4]

- 1) Three books are picked from a shelf containing three novels and three science fictions. What is the probability of getting (a) all novels (b) all are not novels (c) all three are not novels?
- 2) The following table gives the result of certain examination for 180 students.
  - i) Find the value of x
  - ii) Draw histogram.

<b>Marks</b>	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
<b>No. of</b>	10	x	25	2x	55	30

students						
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**Q.6 Solve Any ONE of the following**

**[3]**

- 1) A farmer borrowed Rs. 60,000 and agreed to repay with interest in a year in twelve monthly installments. The first instalment was Rs. 12,000. The next each instalment was less than the preceeding one by Rs. 1000. Find the total amount he paid in the whole year. What was the interest charged? Find the rate of interest charged per annum.
- 2) Product of Pragati's age 2 years ago and 3 years hence is 84. Find her present age.