

- (c) A line passes through the point of intersection of the lines  $x + 2y - 1 = 0$  and  $2x + 3y - 4 = 0$  and it makes equal intercepts on both axes. Find its equation. (05)

OR

Q.3

- (a) Obtain the equation of a line making intercept 'a' on X axis and 'b' on Y axis. (05)  
 (b) Find the equation of a line passing through the point of intersection of the lines  $2x + 7y - 9 = 0$  and  $3x + 2y - 5 = 0$  and perpendicular to  $5x + 2y + 11 = 0$ . (05)  
 (c) The line joining the points  $(k, 3)$  and  $(-2, 1)$  is parallel to the line joining the points  $(-3, 2)$  and  $(1, 0)$ . Find the value of k. (05)

Q.4

- (a) Explain the following terms: (05)  
 (i) Solution (ii) Feasible Solution (iii) Constraints  
 (b) Solve the following LPP by graphical method. (05)

$$\begin{aligned} \text{Max } Z &= 4x + 5y \\ \text{s.t. } 3x + 6y &\leq 2100 \\ 6x + 5y &\leq 2100 \\ \text{and } x, y &\geq 0 \end{aligned}$$

- (c) Solve the following assignment problem so as to minimize the total time. (05)

		Job			
		P	Q	R	S
Persons	A	12	15	18	8
	B	13	10	9	14
	C	10	12	15	13
	D	7	8	9	14

OR

Q.4

- (a) Solve the following LPP by graphical method. (07)

$$\begin{aligned} \text{Max } Z &= 20x + 10y \\ \text{s.t. } 3x + y &\geq 30 \\ x + 2y &\leq 40 \\ 4x + 3y &\geq 60 \\ \text{and } x, y &\geq 0 \end{aligned}$$

- (b) Solve the following assignment problem so that profit is maximum. (08)

		Jobs			
		A	B	C	D
Workers	P	11	12	13	14
	Q	14	15	16	17
	R	15	16	17	18
	S	18	17	16	15

