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Q1A] Select and write the most appropriate answer.

1] Of all the points of the feasible region the optimal value of Z is obtained at a point.

→ (a) at vertex of feasible region.

2] What is a disadvantages of the graphical ~~solve~~ method of determining a trend line?

→ (b) Is subject to human error

3] An agent who gives guarantee to his principal that the party will pay the sale price of goods is called.

→ (b) del credere Agent

4] In sequencing, an optimal path is one that minimizes.

→ (a) Elapsed Time

5] If $E(x) > \text{Var}(x)$ then X follows.

→ (a) Binomial distribution

6] X is r.v. with p.d.f $f(x) = \frac{k}{\sqrt{x}} \quad 0 < x < 4$
 $= 0$, otherwise

Then $E(X) = \frac{4}{3}$

→ b) $\frac{4}{3}$

B] State True or False :-

1) In the regression equation of Y on X , b_{yx} represents slopes of the line.

→ True

2) The bankers discount is also called as commercial discount.

→ True

3) If $f(x) = k \cdot x(1-x)$ for $0 < x < 1$
 $= 0$

Otherwise then $k = 12$

→ True

c] Fill in the blanks.

1) $E(x)$ is considered to be centre of gravity of the probability distribution of x .

2] A dummy row(s) or column(s) with the cost elements as zero (0). the matrix of an unbalanced assignment problem as a square matrix.

3] Graphical solution set of the inequations $x \geq 0$, $y \geq 0$ is in I quadrant

Q2] B]

i]

Job	Machine A	Machine B
I	12	7
II	6	8
III	8	9
IV	11	4
V	5	7
VI	7	8
VII	6	3

sequencing

III	V	II	VI	I	IV	VII
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Job	Machine A		Machine B	
	Start	Finish	Start	Finish
III	0	5	5	14
IV	8	10	14	21
II	10	16	21	29
VI	16	23	29	37
I	23	30	37	44
V	30	35	44	50
IV	35	46	50	54
VII	46	51	54	55

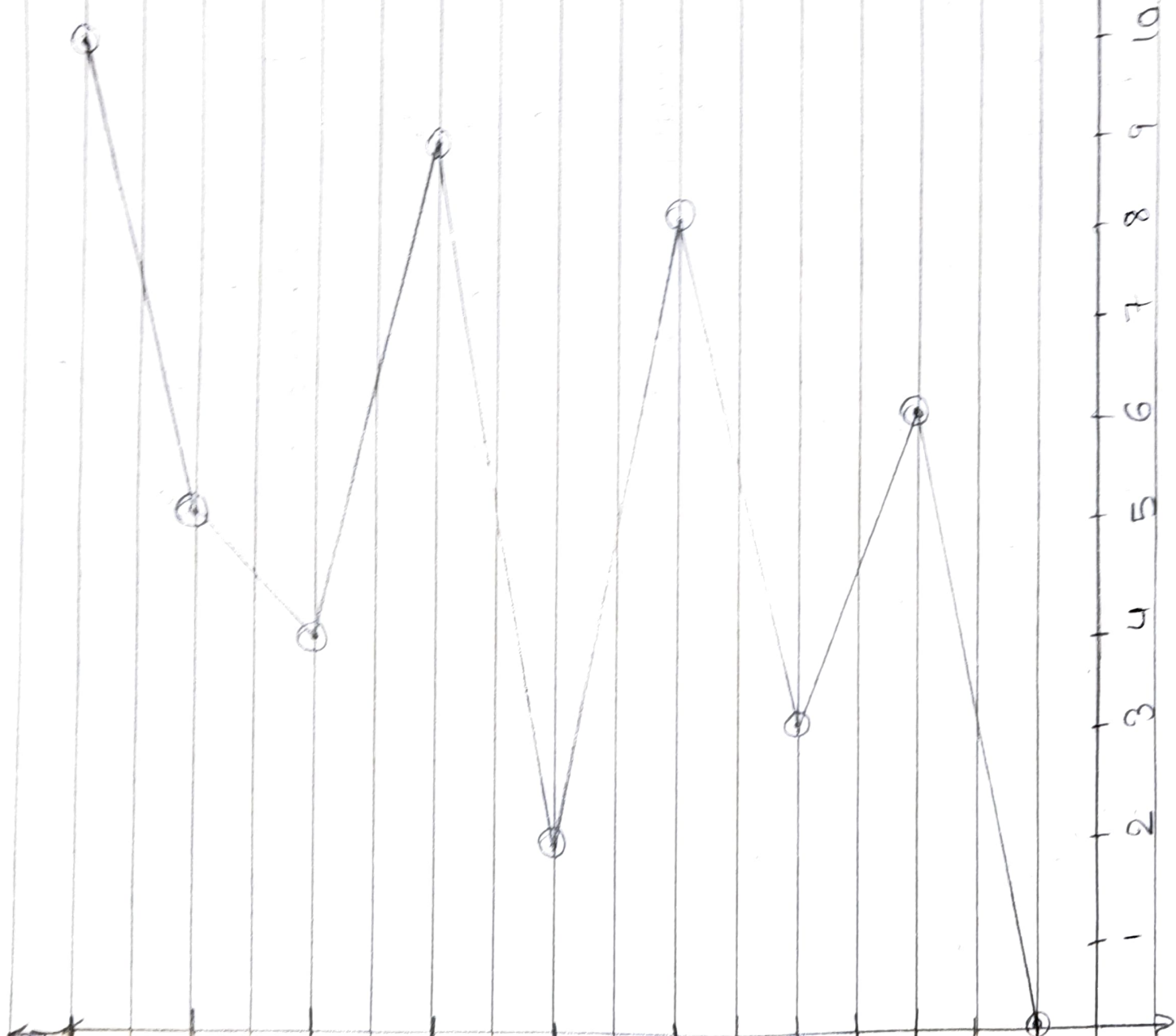
Total Elapsed Time = 55

Total Working time for machine A = 52
machine B = 46

Idle time for machine A = 3 hrs
machine B = 9 hrs

Q2A
iii)

Years	No. of Boxes	3-yearly moving
1991	1	1.33
1992	0	3.66
1993	3	10.33
1994	8	7.33
1995	10	6.33
1996	4	5.66
1997	5	-
1998	8	-



56	60	75	85
83	88	92	95

4	1	0
3	2	2
2	4	3

Row reduction

4	1	0
1	0	0
0	2	1

Column reduction

4	1	0
1	0	0
0	2	1

Salesman	work	Profit
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A	III	60
B	II	58
C	I	58

Total	176
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123

iii)

Let us assume cash sales be x

$$\text{Total sales} = 51000$$

$$\text{Credit sale} = \text{Total Sales} - \text{Cash sale} \\ = 51000 - x$$

$$\text{Total commission} = 4\% \text{ on cash sales} + \\ 6\% \text{ on credit sales.}$$

$$2700 = x \times \frac{4}{100} + \left[\frac{51000 - x}{100} \right] \times \frac{6}{100}$$

$$2700 = \frac{4x}{100} + \frac{306000 - 6x}{100}$$

$$2700 = \frac{4x + 306000 - 6x}{100}$$

$$270000 = 4x - 6x + 306000$$

$$270000 - 306000 = 4x - 6x$$

$$+ \quad 36000 = -2x$$

$$x = \frac{36000}{2}$$

$$x = 18000$$

$$\text{Cash sales} = 18000$$