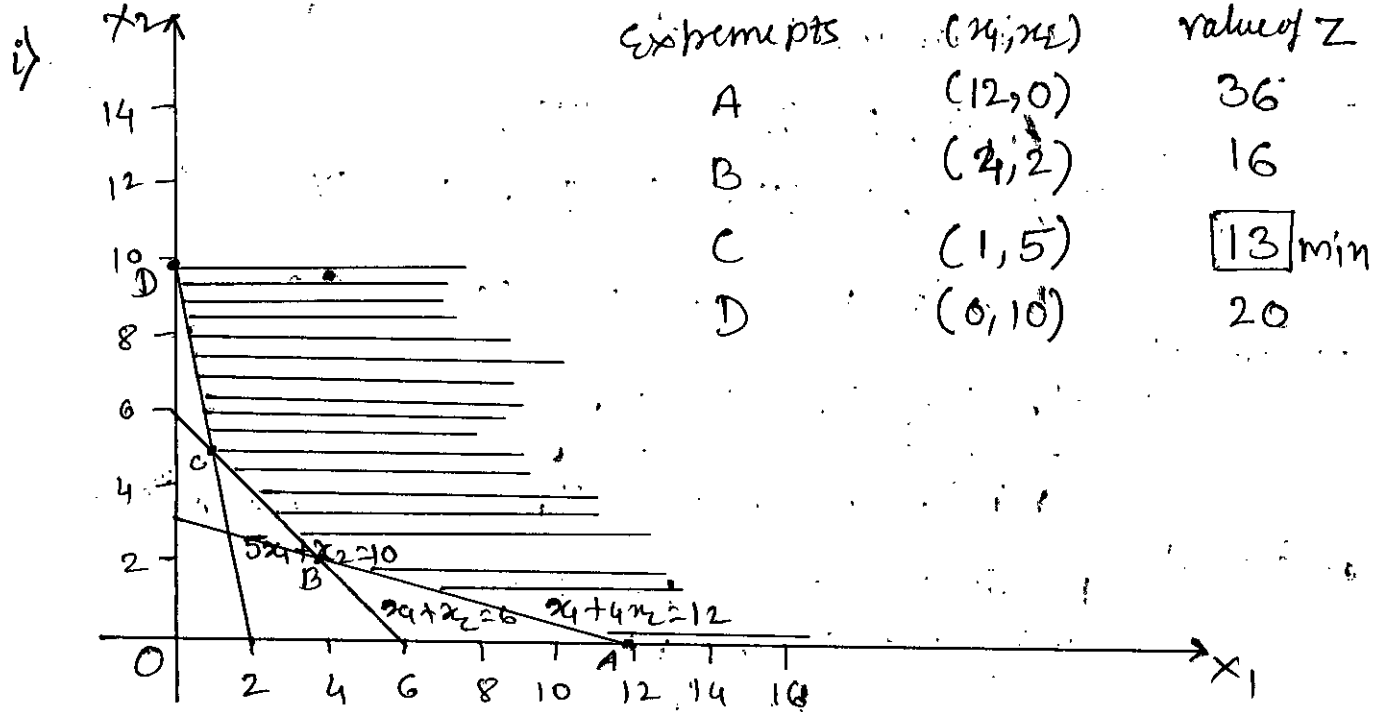


i) → a, ii) → d, iii) → c, iv) → d, v) → b, vi) → b, vii) → d

Q1(a)

Q2 (a)



Q2 (b)

ii) $x_1 = 0, x_2 = 20$, maximum $Z = 200$

Q2 (c)

ii) maximize $Z = 40x_1 + 30x_2$
 Subject to constraints
 $3x_1 + x_2 \leq 30,000$
 $x_1 \leq 8000$
 $x_2 \leq 12000$
 $x_1, x_2 \geq 0$

Q3 (a)

Origin	Destinations				Supply
	D ₁	D ₂	D ₃	D ₄	
O ₁	5	3	6	2	19
O ₂	4	7	9	1	37
O ₃	3	4	7	5	34
Requirements	16	18	31	25	

Value of Z
 $Z = 355$
 $= 355$

Q3 (c)

Source	Destinations				Available
	A	B	C	D	
1	3	7	6	4	5
2	2	4	3	2	2
3	4	3	8	5	3
Requirement	3	3	2	2	

Value of Z
 $= 36 + 3\epsilon$
 $\rightarrow 36$ as $\epsilon \rightarrow 0$

Q.P code: 24193

Q4 (a) ii)

6	4	1	7	2	3	5
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minimum total time = 83 hours

Q4 (b) ii) A → I, B → II, C → III, D → IV
 or A → I, B → III, C → II, D → IV

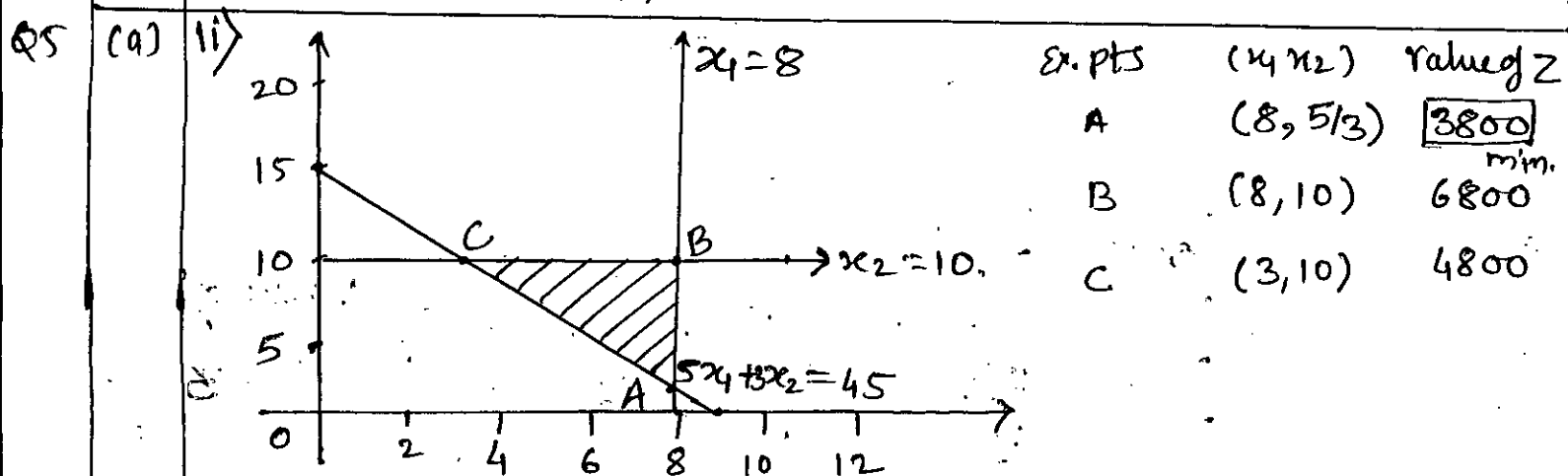
Maximum expected sale = 99

Q4 (c) ii)

2	4	3	5	1
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minimum total time = 30 hours

Q5 (a) i) maximize $Z = 3w_1 + 5w_2$
 subject to constraints
 $w_1 \leq 4$
 $3w_1 + w_2 \leq 6$
 $2w_2 \leq 18$
 $w_1 \geq 0$ and $w_2 \geq 0$



Q5 (b) ii)

Warehouses	Destinations					Avail.			
	I	II	III	IV	V				
A	250	4	250	6	8	13	0	500	
B	43	100	11	600	10	8	0	700	
C	14	4	300	10	13	0	0	300	
D	9	11	150	13	200	3	150	0	500
Require ment	250	350	1050	200	150				

Value of Z = 15150

Q5 (c) ii)

4	5	6	2	1	3
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minimum total time = 53 hours