

Dr. Babasaheb Ambedkar Open University
Term End Examination January-2026

Course : Diploma Course Subject Code : DOR-02 Subject Name : Assignment and Transportation Problems	Date : 01/03/2026 Time : 11:30am to 01:45pm Duration : 02.15 Hours Max. Marks : 70
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Q-1 Solve the following problem so as to maximize the profit for Kush Ltd. **14**

(Profit in Rs.) Jobs

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

OR

Explain the Solution Method of Assignment Problem.

Q-2 Solve the following problem by North West corner rule and find the total transportation expense for Ram Ltd. **14**

	I	II	III	IV	Availability
A	5	1	3	3	34
B	3	3	5	4	15
C	6	4	4	3	12
D	4	1	4	2	19
Requirement	21	25	17	17	80

OR

Obtain feasible solution by using North West corner Method for Padmavati Ltd.

Destinations

Origins	A	B	C	D	E	Supply
I	10	8	11	10	8	35
II	12	10	8	11	7	55
III	15	6	10	12	9	40
IV	17	12	9	10	6	10
V	11	13	10	10	5	10
Demand	50	45	25	15	15	150

Q-3 In Raghav Ltd. five workers are available to work with the machines and the respective expenses (in rupees) associated with each worker-machine assignment are given below. A sixth machine is available to replace one of the existing ones and the associated expenses are also given below. **14**

		Machines					
		M ₁	M ₂	M ₃	M ₄	M ₅	M ₆
	W₁	12	3	6	-	5	9
	W₂	4	11	-	5	-	8
Workers	W₃	8	2	10	9	7	5
	W₄	-	7	8	6	12	10
	W₅	5	8	9	4	6	1

- (a) Determine whether the new machine can be accepted.
 (b) Also determine optimal assignment and the associated saving in expense.

OR

Give assignment in the following problem for maximum profit for Laxman Ltd.

	D₁	D₂	D₃	D₄
O₁	2	3	4	5
O₂	5	6	7	8
O₃	6	7	8	9
O₄	9	8	7	6

- Q-4** Obtain basic feasible solution of the following transportation problem by North West corner rule for Kazi Ltd. **14**

Godowns	A	B	C	D	E	F	Availability
I	9	12	9	6	9	10	5
II	7	3	7	7	5	5	6
III	6	5	9	11	3	11	2
IV	6	8	11	2	2	10	9
Requirement	4	4	6	2	4	2	22

OR

Solve the following transportation problem by matrix minima method. Also obtain the total transportation expense for Nasir Ltd.

	D₁	D₂	D₃	D₄	
O₁	3	6	3	12	30
O₂	9	7	6	3	50
O₃	12	6	15	27	20
	20	40	30	10	100

- Q-5** Write a Short Notes (Any Two)

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1. Mathematical Model of Transportation Problem
2. Variations of the Assignment Problem
3. Least Cost Method
4. Vogel's Approximation Method
5. Modi Method
