

Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

B.Com. (2011 & Onwards) (Sem.-3)

OPERATION RESEARCH

Subject Code : BCOP-304

Paper ID : [B1127]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

SECTION-A

1. **Write briefly :**
 - a. Define Operations Research.
 - b. What are the assumptions of LPP?
 - c. What is Degeneracy in Transportation?
 - d. Define prohibited assignment problems.
 - e. Illustrate Saddle point.
 - f. What is sequencing problem?
 - g. Define the concept of EOQ.
 - h. Differentiate between PERT and CPM.
 - i. How to compute Re-order level of inventory?
 - j. What is Duality?

SECTION-B

2. Discuss in detail the methodology of Operations Research.
3. Define Inventory Control. Explain in various techniques of inventory control.
4. Solve the following assignment problem :

	P	Q	R	S
A	55	20	0	10
B	50	0	30	5
C	20	10	10	0
D	40	10	0	20

5. National Oil co. has 3 refineries and 4 depots. Transportation cost per unit is given below. Find out optimum allocation of output using MODI method.

Refineries	Depot				Capacity
	A	B	C	D	
P	5	7	13	10	700
Q	8	6	14	13	400
R	12	10	9	11	800
Required	300	600	700	400	

6. A co. requires 1500 units of an item per month, each costing Rs. 27. The cost per order is Rs. 150 and the inventory carrying charges are 20% of average inventory. Find out Economic Order quantity and no. of orders per year.

Would you accept a 2% discount on a minimum supply quantity of 1200 units? Compare the cost in both the cases.

7. Solve the following LPP using simplex method :

$$\text{Max } Z = 10 X_1 + 5X_2$$

$$\text{Subject to : } 4 X_1 + 5X_2 \leq 100$$

$$5X_1 + 2X_2 \leq 80$$

$$\text{Where } X_1, X_2 \geq 0$$