

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 16

B.Com. (2013 to 2017 Batch) (Sem.-3)

OPERATION RESEARCH

Subject Code : BCOP-304

M.Code : 22016

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**Answer the following :**

- Q1. Define linear programming.
- Q2. What is Duality?
- Q3. What is an unbalanced transportation problem?
- Q4. Define Assignment Problem.
- Q5. What is degeneracy in transportation problem?
- Q6. Define a Pure Game.
- Q7. Define Sequencing.
- Q8. What is Economic Order Quantity?
- Q9. Define PERT.
- Q10. What is free float in the network models?

SECTION-B

- Q11. A company produces two types of tables, T1 and T2. It takes 2 hours to produce the parts of one unit of T1, 1 hour to assemble and 2 hours to polish. It takes 4 hours to produce the parts of one unit of T2, 2.5 hour to assemble and 1.5 hours to polish. Per month, 7000 hours are available for producing the parts, 4000 hours for assembling the parts and 5500 hours for polishing the tables. The profit per unit of T1 is Rs.90 and per unit of T2 is Rs.110. How many of each type of tables should be produced in order to maximize the total monthly profit?
- Q12. Four persons A, B, C and D are to be assigned four jobs I, II, III and IV. The cost matrix (Rs.) is given as under, find the proper assignment.

Man/Jobs	A	B	C	D
I	8	10	17	9
II	3	8	5	6
III	10	12	11	9
IV	6	13	9	7

- Q13. MPCC is trying to decide between two alternate Order Plans for its inventory of a certain item. Irrespective of the plan to be followed, demand for the item is expected to be 1,000 units annually. Under Plan 1st, Midwest would use a teletype for ordering; order costs would be Rs. 40 per order. Inventory holding costs (carrying cost) would be Rs. 100 per unit per annum. Under Plan 2nd order costs would be Rs. 30 per order. And holding costs would 20% and unit Cost is Rs. 480. Find out EOQ and Total Inventory Cost than decide which Plan would result in the lowest total inventory cost?
- Q14. What is network analysis? Explain CPM in details with the help of a suitable example.
- Q15. Explain transportation problem in details.
- Q16. What is linear programming? Discuss it applications to solve managerial problems.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.