LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

U.G. DEGREE EXAMINATION –**ALLIED**

THIRD SEMESTER – **APRIL 2019**

ST 3103 / ST 3100 – RESOURCE MANAGEMENT TECHNIQUES

Date: 13-04-2019   Dept. No.   Max. : 100 Marks

Time: 01:00-04:00

SECTION–A

Answer any FOUR questions: **(4 X 10= 40)**

1. Enumerate the advantages of Linear Programming Problem.

2. Discuss the applications of operations research.

3. Explain the concept of transportation problem and explain the least cost method of solving it.

4. Solve the following assignment problem which minimizes the total man hours:

Men

Jobs

	A	B	C	D
1	10	25	15	20
2	15	30	5	15
3	35	20	12	24
4	17	25	24	20

5. Distinguish between CPM and PERT.

6. Explain the characteristics of inventory model.

7. The following table gives the activities in construction project and time duration:

Activity	Preceding activity	Normal time
1-2	-	20
1-3	-	25
2-3	1-2	10
2-4	1-2	12
3-4	1-3, 2-3	5
4-5	2-4, 3-4	10

Draw the network activity of the project and find the critical path.

8. What is meant by mathematical modeling? Explain the various types of models.

Answer any THREE questions: **(3 X 20= 60)**

9. Explain the general phases of solving operations research models.

10. What are the essential characteristics of an LPP?

11. Explain in detail Critical Path Method and Project Evaluation and Review Technique.

12. For the following transportation problem, determine the Initial Basic Feasible Solution using (i) North-West corner rule, (ii) Least cost method (iii) Vogel's approximation method.

	D	E	F	G	Avaiability
A	11	13	17	14	250
B	16	18	14	10	300
C	21	24	13	10	400
Requirement	200	225	275	250	

13. The following table lists the job of a network along with their time estimates:

Job		Duration (days)		
i	j	Optimistic	Most likely	Pessimistic
1	2	3	6	15
1	6	2	5	14
2	3	6	12	30
2	4	2	5	8
3	5	5	11	17
4	5	3	6	15
6	7	3	9	27
5	8	1	4	7
7	8	4	19	28

   Draw the project network diagram. Calculate the length and variance of the critical path.

   14. Explain the costs affecting inventory control.

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