

16P244

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Name.....

Reg. No.....

SECOND SEMESTER M.Com. DEGREE EXAMINATION, MAY-2017

(Regular/Supplementary/Improvement)

(CUCSS - PG)

CC 15P MC2 C09 - MANAGEMENT SCIENCE

(2015 Admission Onwards)

Time: Three Hours

Maximum: 36 Weightage

Section A

(Answer *all* questions. Each question carries 1 weightage)

1. What is zero sum game?
2. What is degeneracy in L.P.P.?
3. What is network analysis?
4. What is waiting line theory?
5. What is an unbalanced assignment problem?
6. What are the different initial allocation methods in a transportation problem?

(6 x 1 = 6 weightage)

Section B

(Answer any *six* questions. Each question carries 3 weightage)

7. Solve the following game:

		Player B	
		B1	B2
Player A	A1	3	5
	A2	4	1

8. What are the steps involved in solving linear programming by graphic method?
9. Distinguish between PERT and CPM.
10. Explain MODI method of solving transportation problem.
11. Construct a network for the following relationships of various activities in a project -
Activity : A B C D E F G H I J K
Predecessor : - - - A B B C D E H, G E, G

12. Solve the following assignment problem so as to minimize the cost:

		Job			
		I	II	III	IV
Workers	A	32	26	35	38
	B	27	24	26	32
	C	28	22	25	34
	D	10	10	16	16

13. Explain the Hungarian method of solving assignment problem.

14. Find the dual of the following primal:

$$\text{Minimize } Z = 4x_1 + 2x_2 + x_3$$

$$\text{Subject to } x_1 + x_2 \leq 10$$

$$3x_1 + x_2 + x_3 \geq 23$$

$$7x_1 - x_3 = 6$$

$$x_1, x_2, x_3 \geq 0$$

(6 x 3 = 18 weightage)

Section C

(Answer any **two** questions. Each question carries 6 weightage)

15. A project has the following time schedule:-

Activity	1-2	1-3	1-4	2-5	3-6	3-7	4-6	5-8	6-9	7-8	8-9
Time in months	2	2	1	4	8	5	3	1	5	4	3

Construct network and compute :-

a) Critical path and project duration

b) Total float, free float and independent float.

16. Solve the following L.P.P. by the simplex method:

$$\text{Maximize } Z = 3x_1 + 5x_2 + 4x_3$$

$$\text{Subject to } 2x_1 + 3x_2 \leq 8$$

$$2x_2 + 5x_3 \leq 10$$

$$3x_1 + 2x_2 + 4x_3 \leq 15$$

$$\text{where } x_1, x_2, x_3 \geq 0$$

17. Solve the Transportation problem:

	A	B	C	D	E	Availability
F	4	3	1	2	6	40
G	5	2	3	4	5	30
H	3	5	6	3	2	20
I	2	4	4	5	3	10
Requirement	30	30	15	20	5	

(2 x 6 = 12 weightage)
