Project Schedule

Activity	Name	Time	Activity	Name	Time (days)
1-2	A	4	5-6	G	4
1-3	B	1	5-7	H	8
2-4	C	1	6-8	I	1
3-4	D	1	7-8	J	2
3-5	E	6	8-10	K	5
4-9	F	5	9-10	L	7

Construct the project network and total project duration citing critical path activities.

UNIT – IV

8. (a) Solve the following game :

	B1	B2	B3	B4	B5
A1	2	-2	3	7	6
A2	6	3	1	4	0

(b) Determine the optimal strategy for the company A and B and the value of the game for the given pay-off matrix :

	B1	B2	B3
A1	6	4	3
A2	2	4	8
A3	1	3	2

9. What is simulation ? What are the advantages, uses and limitations of simulation to a business manager ?

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Roll No. .....

12026

MBA 2 Yr. 2nd Semester CBCS (2016-17) Examination–May, 2017

OPERATION RESEARCH

Paper : 16IMG22C6

Time : 3 hours ***Max. Marks : 80***

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note: Section A is **compulsory**. Attempt **one** question from each unit in Section B. All questions carry equal marks.

SECTION – A

1. (a) What is the objective of transshipment problem ?

(b) What is a mixed strategy in a competitive game ?

(c) What is a saddle point in a competitive game ?

(d) What is crashing in a network ?

(e) Differentiate between PERT and CPM.

(f) What is a Pay-off table ?

(g) What is the Laplace criteria of decision making under uncertainty ?

(h) What is Expected Value of Perfect Information (E.V.P.I.) ?

SECTION – B

UNIT – I

2. What are the important areas of applications of operations research techniques in Operations Management ?

3. Maximize $Z = 40\ x_1 + 80\ x_2$

Subject to the constraints

$$2x_1 + 3x_2 \leq 48.$$
$$x_1 \leq 15.$$
$$x_2 \leq 10.$$
$$x_1, x_2 \geq 0.$$

UNIT – II

4. There are five jobs to be assigned, one each to 5 machines and the associated cost matrix (in Rupees) is as follows :

Jobs	Machines →	I	II	III	IV	V
	A	1	3	2	3	6
	B	2	4	3	1	5
	C	5	6	3	4	6
	D	3	1	4	2	2
	E	1	5	6	5	4

Assign the jobs so that the total cost is minimized.

5. Find an optimal solution to the following transportation problem :

Sources	Destination			Supply
	X	Y	Z	
A	2	7	4	50
B	3	3	7	70
C	5	4	1	80
D	1	6	2	140
Demand	70	90	180	340

UNIT – III

6. The following table gives the activities in a construction project and other related information :

Activity	t_o	t_m	t_p
1-2	20	30	46
1-3	9	12	21
2-3	3	5	7
2-4	2	3	4
3-4	1	2	3
4-5	12	18	24

(i) Draw a PERT network.

(ii) Calculate project duration.

(iii) Find the critical path

(iv) Find the probability that the project will be completed within 50 days.

7. A project scheduled has following characteristics :