

Total No. of Questions : 10]

SEAT No. :

P1952

[4770] - 2004

[Total No. of Pages : 3

M.B.A. (Semester - II)
204 : DECISION SCIENCE
(2013 Pattern)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *Attempt 5 (five) questions.*
- 2) *Each question has an internal option.*
- 3) *Each question carry equal marks. (10)*
- 4) *Figures to the right indicate marks for questions.*
- 5) *Graph will not be provided, draw diagram on answer sheet.*
- 6) *Non scientific calculator is allowed.*

Q1) Solve the following LPP graphically (graphical method). **[10]**

Maximise $z = 120x + 100y$

Subject to the constraints :

$$10x + 5y \leq 80$$

$$6x + 6y \leq 66$$

$$4x + 8y \geq 24$$

$$5x + 6y \leq 90$$

$$x \geq 0, y \geq 0$$

OR

Q2) A company has to assign four workers A,B,C and D to four jobs w, x, y, z. The cost matrix is given below. **[10]**

Workers	job w	Job x	Job y	Job z
A	1000	1200	400	900
B	600	500	300	800
C	200	300	400	500
D	600	700	300	1000

Find an optimal assignment schedule and total corresponding cost.

P.T.O.

Q3) Patients arrive at a clinic according to poisson distribution at the rate of 20 patients per hour. Examination time per patient is exponential with mean rate of 30 per hour. **[10]**

Find :

- a) Find the traffic intensity
- b) What is the probability that new arrival does not have to wait.
- c) What is the average waiting time of patient before he leaves the clinic.

OR

Q4) The rainfall distribution in monsoon seasons is as fallows : **[10]**

Rain in cm.	0	1	2	3	4	5
Frequency	50	25	15	5	3	2

Simulate the rainfall for 10 days using the following random variables; 67, 63, 39, 55, 29, 78, 70, 06, 78, 76 and then find average rainfall.

Q5) Find the optimal strategies for A and B in the following game. Also obtain the value of the game. **[10]**

	B's Strategy		
	B ₁	B ₂	B ₃
A ₁	9	8	-7
A ₂	3	-6	4
A ₃	6	7	7

OR

Q6) The conditional pay - offs in erors of rupees for the three models of a car for the various likely sales figures are as follows : **[10]**

Model	Sales in units		
	1 lakh	2 lakh	3 lakh
X	30	10	10
Y	55	20	3
Z	16	35	65

- Q7) a)** Explain the 'PERT' and 'CPM' are the most widely applied techniques. **[5]**
b) Role of network techniques in project management explain it. **[5]**

OR

Q8) Explain with example : EST; LST; EFT; LFT, Slack & Float; Network activity. **[10]**

- Q9) a)** What is the probability of getting a primary number in a single throw of a dice? **[5]**
b) What is the probability of getting head in tossing of a coin. **[5]**

OR

- Q10)a)** Find the binomial distribution whose mean is 3 and variance is 2. **[5]**
b) Explain interval estimation and standard errors of estimation. **[5]**

