

XR-103**010-003102****M.B.A. (CBCS) Sem.-I Examination
January-2015****(CCT-10102) : Quantitative Techniques in Management****Faculty Code : 010
Subject Code : 003102****Time : 3 Hours]****[Total Marks : 70****Instruction :** All the questions carry equal marks.

1. Write answers in short : (any 7 out of 9)

- (1) Northwest Corner Approach
- (2) Iconic Models
- (3) Dummy activity
- (4) MaxiMax Principle
- (5) Unbalanced Transportation Problem
- (6) MODI method
- (7) Laplace Principle
- (8) Optimal Solution
- (9) Zero sum Game

2. (A) Imagine yourself to be the Executive Director of a 5-Star Hotel which has four banquet halls that can be used for all functions including weddings. The halls were all about the same size and the facilities in each hall differed. During a heavy marriage season, 4 parties approached you to reserve a hall for the marriage to be celebrated on the same day. These marriage parties were told that the first choice among these 4 halls would cost 25,000 for the day. They were also required to indicate the second, third and fourth preferences and the price that they would be willing to pay. Marriage party A & D indicated that they won't be interested in Halls 3 & 4. Other particulars are given in the following table :

Marriage Party	Revenue/Hall			
	Hall 1	Hall 2	Hall 3	Hall 4
A	25,000	22,500	X	X
B	20,000	25,000	20,000	12,500
C	17,500	25,000	15,000	20,000
D	25,000	20,000	X	X

Where X indicates that the party does not want that hall. Decide on an allocation that will maximize the revenue to your hotel.

(B) Explain with the help of suitable example how computers are helpful in decision making in any organization ?

OR

(A) Solve the following with simplex method :

Maximise $Z = 8x_1 + 16x_2$

Subject to $x_1 + x_2 \leq 200$

$x_2 \leq 125$

$3x_1 + 6x_2 \leq 200$

$x_1, x_2 \geq 0$

(B) What are the advantages and limitations of simulation.

3. What is an Operations research ? Discuss how it is helpful for any business organization.

OR

What is a game theory ? State the assumptions underlying it. Discuss its importance to business decisions.

4. (A) Two fast food outlet shops, McDonalds and Dominos are competing for an increased market share. The payoff matrix is shown in the following table.

McDonalds	Dominos			
	Give Coupons	Decrease Price	Maintain present Strategy	Increase Advt.
Give Coupons	2	-2	4	1
Decrease Price	6	1	12	3
Maintain present Strategy	-3	2	0	6
Increase Advt.	2	-3	7	1

Solve the following using Game theory and obtain the value of the game.

(B) Discuss the Delphi method of making forecast.

OR

(A) From the below Information Draw a Network Diagram.

Activity	A	B	C	D	E	F	G	H	I	J
Pre. Act	---	A	B	B	B	C	C	F, G	D, E, H	I

(B) Discuss the moving average model of forecasting and mention its drawbacks.

5. A departmental store wishes to purchase the following quantities of sarees :

Types of Sarees	A	B	C	D	E
Quantity	150	100	75	250	200

Four Different manufacturers can supply the sarees, but not more than the quantities mentioned below (all types of sarees combined)

Manufacturer	W	X	Y	Z
Total Quantity	300	250	150	200

Profit earned by the store on each type of saree are

Manufacturer	Sarees				
	A	B	C	D	E
W	275	350	425	225	150
X	300	325	450	175	100
Y	250	350	475	200	125
Z	325	275	400	250	175

Solve the above problem using Transportation method and find the optimal profit that can be earned by the store.

