HCY-161100080303 Seat No. _____

M. B. A. (Sem. III) (Banking & Finance) (CBCS) Examination

October / November - 2017

Basics of Quantitative Techniques & Operation Research

Time : **3** Hours] [Total Marks : **70**

Instruction : All the questions carry **equal** marks.

1 Explain the importance of computers in Operations Research.

OR

1 What is the rationale of model building ? Which are the different types of models ? Explain with the help of suitable examples.

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

OR

2 A city hospital has the following minimal daily requirements for nurses

Period	*Clock Time (24 hour day)*	*Minimal number of nurses required*
1	6 a.m – 10 a.m	2
2	10 a.m – 2 p.m	7
3	2 p.m – 6 p.m	15
4	6 p.m – 10 p.m	8
5	10 p.m – 2 a.m	20
6	2 a.m – 6 a.m	6

Nurses report at the hospital at the beginning of each period and work for 8 consecutive hours. The hospital wants to determine the minimal number of nurses to be employed so that there will be a sufficient number of nurses available for each period.

Formulate this as a linear programming problem.

3 What is Operations Research (QT) ? Explain with the help of suitable examples how it will be helpful in taking business decisions

OR

3 From the information given below prepare a network diagram and obtain the critical path :

Name :	A	B	C	D	E	F	G	H	I	J	K
Activities node :	1-2	1-3	1-4	2-5	3-5	3-6	3-7	4-6	5-7	6-8	7-8
Duration (days) :	2	7	8	3	6	10	4	6	2	5	6

4 What are the major comparative characteristics of the PERT model and CPM Model ? What are their limitations, if any ? Discuss.

OR

4 Given below is the cost table of transporting One unit of product from various factories to markets. Solve the following using VAM method and obtain Total cost

FROM	TO				Supply
	A	B	C	D	
1	6	4	9	1	40
2	20	6	11	3	40
3	7	1	0	14	50
4	7	1	12	6	90
DEMAND	90	30	50	30	

5 Write short notes on : (any two)

(a) Programme Evaluation and Review Techniques

(b) Decision Tree

(c) Solutions of Models.