



**JX-161100080303**

Seat No. \_\_\_\_\_

**M. B. A. (Banking & Finance) (Sem. III) (CBCS)  
Examination  
October - 2019  
Basics of Quantitative Techniques & Operation  
Research**

Time : 3 Hours]

[Total Marks : 70

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

- 1 What is Operation Research ? Account for the growing importance of OR in business decisions.

**OR**

- 1 A manufacturer of shoes makes three types of shoes-Formal leather shoes (pair) which takes 35 minutes to assemble, sports shoes (pair) taking 60 minutes to assemble and Canvas shoes (pair) which takes 20 minutes to assemble. There are 40 hours of assembly time available per day. The profit contribution per pair on sale of Formal shoes is Rs. 225, Rs. 150 on sports shoes and Rs. 100 on Canvas shoes.

Special Imported lace is used in Formal Leather shoes and they are available for only 25 pairs. Other simple lace is used for sports and canvas shoes of which 85 pairs are in stock. Sports and canvas shoes use same quantity and quality of raw material for sole and which is enough for making only 75 canvas shoes pairs. Formulate this as a linear programming problem.

- 2 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)	6	11	12	7	10	14	8	10	6	9	10

**OR**

- 2 Explain, by taking a suitable example, the North-west Corner Rule and the Least Cost Method of transportation.
- 3 What are the major comparative characteristics of the PERT model and CPM Model? What are their limitations, if any ? Discuss.

**OR**

- 3 What is the rationale of model building ? Which are the different types of models ? Explain with the help of suitable examples.
- 4 Solve the following transportation problem using VAM method and obtain the Total Cost :

Factory	Warehouses					Capacity
	A	B	C	D	E	
<b>1</b>	16	8	13	9	13	<b>110</b>
<b>2</b>	12	5	10	10	10	<b>90</b>
<b>3</b>	5	16	8	11	10	<b>60</b>
<b>4</b>	14	19	10	13	5	<b>100</b>
<b>Requirement</b>	<b>80</b>	<b>40</b>	<b>100</b>	<b>60</b>	<b>80</b>	

**OR**

- 4 What is a game theory? Discuss its importance and major limitations in taking business decisions
- 5 Write short notes on : (any two)
  - (a) Laplace Principle
  - (b) Solutions to Models
  - (c) Management Information System.

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