PBU-161100020102 Seat No. _____

M. B. A. (Sem. I) (CBCS) Examination

November / December - 2018

Quantitative Techniques in Management

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

Instruction : All the questions carry equal marks.

1 What kind of decision making situations may be analysed using PERT and CPM Techniques? What are the major comparative characteristics of the PERT model and CPM Model?

OR

1 Solve the following problem using transportation method, obtaining the initial feasible solution by VAM

From	*To*					*Supply*
	A	*B*	*C*	*D*	*E*	
1	75	64	98	59	56	19
2	42	95	67	60	35	23
3	11	98	82	31	89	27
4	81	10	52	14	20	15
5	22	15	67	89	14	15
Demand	23	21	25	13	17	

2 (a) Discuss the Characteristic features of Operations Research

(b) What is a 'game' in game theory ? Describe the maximin an minimax principles of game theory.

OR

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)	5	10	11	6	9	13	7	9	5	8	9

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

OR

3 Solve the following game using graphical method.

A's Strategy		*B's Strategy*	
		b_1	b_2
	a_1	−7	6
	a_2	7	−4
	a_3	−4	−2
	a_4	8	−6

4 (a) What is simulation ? State the major reasons for using simulation to solve a problem.

(b) What is linear programming problem? Discuss the scop and role of linear programming in solving management problems.

OR

4 Five employees of the company are to be assigned five jobs. The details of time taken to complete job by each employee is given below. Determine the assignment pattern that minimise the total time taken.

Job	*Employee*				
	A	*B*	*C*	*D*	*E*
1	48	23	73	63	73
2	43	18	83	68	68
3	43	21	88	73	78
4	53	28	103	73	83
5	48	23	88	70	73

5 Write Short Notes on : (Any Tow)

(a) Decision Support System

(b) Qualitative models of forecasting

(c) North-West Corner approach for a Transportation problem