THE AMERICAN COLLEGE, MADURAI

(An Autonomous Institution Affiliated to Madurai Kamaraj University)
Re-accredited (2nd Cycle) by NAAC with Grade "A", CGPA – 3.46 on a 4-point scale

Backlog Arrear Examination, March 2021

MBA 5505 **QUANTITATIVE TECHNIQUES** **TIME: 3 hrs**

Marks:75

Part A

Answer any FIVE of the following questions: **(5*15 mark = 75 Marks)**

1. Summarize the various real life application areas of Linear Programming
2. Consider the transportation problem shown in the below table

	M1	M2	M3	M4	M5	Supply
P1	10	2	16	14	10	300
P2	6	18	12	13	16	500
P3	8	4	14	12	10	825
P4	14	22	20	8	18	375
Demand	350	400	250	150	400	

Find the Initial Basic Feasible solution using each of the following methods and compare their total costs.
(i) North West Corner Rule Method
(ii) Vogel's Approximation Method

3. Define Game Theory. Explain in detail the Classification and Assumptions of Game Theory.

4. Elaborate Break Even Analysis and BEP. List down the Advantages and the Limitations of Break Even Analysis.

5. Solve the below using Hungerian Method. The matrix entries represent the processing time in hours.

		Operator				
		1	2	3	4	5
Jobs	1	10	12	15	12	8
	2	7	16	14	14	11
	3	13	14	7	9	9
	4	12	10	11	13	10
	5	8	13	15	11	15

6. What is Time Series? Explain the components of Time Series elaborately with examples.

7. Solve the following LP Problem graphically

Minimize $Z = 2x1 + 3x2$

Subject to constraints: $x1 + x2 \geq 6$

$7x1 + x2 \geq 14$

$x1 \& x2 \geq 0$