Code No: 721CN **R15**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MBA II Semester Examinations, December - 2019
QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS

Time: 3hours **Max.Marks:75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A **5 × 5 Marks = 25**

1. Write notes on the following:
   a) Applications of Operations Research (OR) in Finance & Accounting. [5]
   b) Basic Feasible Solutions of Linear Programming Problem (LPP). [5]
   c) Multiple Optimal Solutions in Assignment Problem. [5]
   d) Decision Making under Uncertainty. [5]
   e) Queue Length vs. System Length. [5]

PART - B **5 × 10 Marks = 50**

2. Briefly explain the different Techniques of OR. Where are they applied? [10]

OR

3.a) What are the advantages of OR?
   b) How did OR develop in India and where are they being applied now? [5+5]

4.a) What is a Transportation Problem?
   b) Briefly explain the steps involved in solving the Vogel's Approximation Method (VAM). [5+5]

OR

5. Solve the following Linear Programming Problem graphically:-
   Maximize: $Z = 3X_1 + 4X_2$,
   Subject to: $X_1 + 2X_2 \leq 30$
   $X_1 + X_2 \leq 10$
   and $X_1, X_2 \geq 0$ [10]

6. What is an Assignment Problem? What are its Objectives and Characteristics? [10]

OR

7. Solve the following Assignment Problem Efficiency Matrix:- [10]

	B_1	B_2	B_3	B_4
A_1	60	65	70	55
A_2	70	60	55	65
A_3	65	60	75	70
A_4	50	55	60	80

8. What is Coefficient of Optimism (Hurwicz Criterion) in Decision-Making under Uncertainty? Briefly explain the same. [10]

OR

9. What is Minimax Regret Criterion? Give a hypothetical example of the same. [10]

10. At a Sales Counter manned by a single person, customers arrive according to Poisson Distribution, at a mean rate of 20 per hour and the time required to service a customer is expected to follow Exponential Distribution with a mean rate of 120 seconds. Find the Average Waiting Time of a customer in the System and in the Queue. [10]

OR

11. What is a Q-System? What are its basics elements? Explain the same briefly. [10]

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