Roll No .....

## ME-7003 (CBGS) B.E. VII Semester

Examination, November 2019

## Choice Based Grading System (CBGS) OR and Supply Chain

Time: Three Hours

Maximum Marks: 70

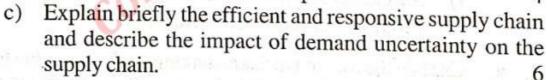


Note: i) Attempt any five questions.

- ii) All questions carry equal marks.
- 1. a) Explain the feasibility and optimality conditions in a LPP.
  - b) Solve the following problem using Simplex method. 8

    Minimize  $Z = 8x_1 + 4x_2 + 2x_3$ Subjected to  $4x_1 + 2x_2 + x_3 \le 8$   $3x_1 + 2x_3 \le 10$   $x_1 + x_2 + x_3 = 4$
  - a) Define the Supply chain management. What are the important drivers of the Supply chain management?
    - b) Describe the Push/Pull and cycle views of supply chain processes with suitable example.

 $x_1, x_2, x_3 \ge 0$ 



- a) Define a Queue and give some applications of Queuing theory.
  - b) In a bank cheques are cashed at a single teller counter. Customers arrives at the counter in a position manner at an average rate of 25 customers per hour. The teller takes on an average of 2 minute to cash cheque the service time is exponentially distributed.
    - i) Calculate the Percentage of time the teller is busy.

ii) Calculate the Average time of a customer is expected to wait. 4. A certain item costs Rs.235 per ton. The monthly requirement is 5 tons and each time the stock is replenished there is a setup cost of Rs.1000. The cost of carrying of inventory has been estimated at 10% of the value of the stock per year. What is the optimal order quantity? 5. a) Define the Heuristic and Meta-heuristic algorithms. Indicate the difference between Decision-making under risk and uncertainty in Statistical decision theory. How will you carry out consistency check in an AHP? Take an example and calculate inconsistency ratio. 6. a) What is Inventory control? Explain in an industrial undertaking? What is "Just In Time" production? What are its aims? 4 b) Explain ABC analysis used in inventory control and explain c) briefly about MRP. 7. a) Write Little's Formula. State some applications of theory. b) Write short notes on following 7 Single Server Model (M/M/1) Multiple Server Models (M/M/S) Explain the role of Decision making analysis in a business organization and also describe the steps involved in it. 7 Give short notes on the following: Hurwitz criterion for decision making under uncertainty. Describe some methods which are useful for decision making under uncertainty. Illustrate each by an

example.