

**R. J. Tibrewal Commerce College, Vastrapur, Ahmedabad.**

**Department of Statistics**

**CE-301 B Advanced Statistics - VII**

**Semester – 5**

**(Year – 2020-21)**

**Assignment 1:**

**Q.1** Define Inventory and obtain formula for basic EOQ model.

**Q.2** In a factory certain item were produced at a rate of 1000 per month, during the time demand occurs at a rate of 600 units per month. If the production cost per unit is Rs. 5000 and its inventory charges are 10% of the production cost. The set up cost is Rs 10000 per production run.

Find

1. EOQ
2. The minimum cost of EOQ
3. The time interval during which the production is carried out
4. The number of production run per year
5. Total inventory cycle time

**Assignment 2:**

**Q.3** Explain the structure of queuing system in detail.

**Q.4** A customer arrive at a service station at the rate of 2 per 15 minutes and the server can serve in FIFO system to the customer at the rate of 12 per hours. If the arrival of customer follows Poisson distribution and the service rate follows exponential distribution then answer the followings

1. What is the probability that the server is idle?
2. What is the probability that there are 0 to 2 customers in the system?
3. What is the expected length of the queue?
4. What is the expected length of the queuing system?
5. What is the expected waiting time of a customer in the system?