

G.PULLAIAH COLLEGE OF ENGINEERING & TECHNOLOGY (AT)

UNIT-V

TWO MARKS QUESTIONS

1. Derive formula for the Average number of customers in the system.
2. Derive formula for the Average number of customers in the queue.
3. Derive formula for the Expected waiting line in the system.
4. Derive formula for the Expected waiting line in the queue.
5. What are the queuing problems?
6. Explain Traffic intensity
7. Discuss queuing theory. Explain its applications
8. Kendal's Notation for representing Queuing model

Essay questions

1. Explain about Queuing system characteristics
2. Give general structure of Queuing system
3. What are the assumptions of a single channel Queue?
4. Explain Pure Birth and Death process
5. Write characteristics of $(M/M/1): (\infty/FIFO)$ model
6. Explain about $(M/M/1): (\infty/FCFS)$ Queuing model (or) Write about $(M/M/1): (\infty/FIFO)$ Queuing system
7. Derive the formula for the probability distribution density function of the waiting time distribution
8. A toll gate is operated on a freeway, where cars arrive according to a Poisson Distribution with mean frequency of 1.2 cars per minute. The time of completing payment follows an exponential distribution with mean of 20 seconds. Find (i) The idle time of the counter (ii) Average number of cars in the system (iii) Average number of cars in queue (iv) Average time a car spends in the system (v) Average time that a car spends in the queue (vi) The probability that car spends more than 30 seconds in the system.
9. A self service canteen employee's one cashier each counter. 8 customers arrive per every 10 minutes on an average. The cashier can serve on average one per minute. Assuming that the arrivals are Poisson and the service time distribution is exponential, Determine (i) The average number of customers in the system (ii) The average queue length (iii) Average time a customer spends in the system (iv) Average waiting time of each customer.
10. Consider a single server queuing system with Poisson input and exponential service time. Suppose the mean arrival rate is 3 calling units per hour with the expected service time as 0.25 hours and the maximum permissible number of calling units in the system is two. Obtain the steady state probability distribution of the number of calling units in the system and then calculate the expected number in the system.
11. Explain about $(M/M/S): (\infty/FIFO)$ Queuing model