JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY
Electronics and Communication Engineering
Telecommunication Networks (15B11EC611)
Tutorial Sheet: 1

Q1. [CO1] What is point to point network? What are its advantage & disadvantages? Also explain the term full connectivity & fully connected network.

Q2. [CO1] An exchange serves 5000 subscribers. If average BHCA is 20000 and CCR is 60%, calculate the busy hour calling rate.

Q3. [CO1] A group of 30 servers carry traffic of 10 erlangs. If the average duration of a call is four minutes, calculate the number of calls put through by a single server and the group as a whole in 1-hr period.

Q4. [CO1] During a 2-hr busy period 2400 call arrives at an exchange. Average call duration is 2 minutes. Find traffic in Erlangs, CCS, CS and CM.

Q5. [CO1] 10000 subscribers are connected to an exchange. If the exchange is designed to achieve a CCR of 0.8 when the busy hour calling rate is 4.8, what is the BHCA that can be supported by the exchange? What would be the call processing time (time exchange requires to complete one process related to a call for this exchange).

Q6. [CO1] A call processor in an exchange requires 120 millisecond to complete 1 process of the call (call processing time or call service time).What is the BHCA rating for the processor. If the exchange is capable of carrying 700E of traffic, what is the CCR? Assume call holding time (total time complete a call-all the processes) is 2 minutes.

Q7. [CO1] The traffic statistics of a company is 180 outgoing calls are initiated every hour during working hours. Equal number of calls comes in. Each call lasts for 200 seconds on the average. If the GOS required is 0.05, determine the number of lines required between the PABX and the main exchange.

Q8. [CO1] In an exchange the call arrives at the rate of 1100 calls per hour, with each call holding for duration of 3 minutes. If the demand is serviced by a trunk group of 50 lines, determine the GOS.

Q9. [CO1] An exchange is designed to handle 2000 calls during the busy hour. One day the number of calls during the busy hour is 2200.What is the resulting GOS.

Q10. [CO1] Over a 20 minutes observation interval 40 subscribers initiate calls. Total duration of the calls is 4800 seconds. Calculate the load offered to the network by the subscribers and the average subscriber traffic.