

Code No: 57040

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, December-2014

TELECOMMUNICATION SWITCHING SYSTEMS

(Electronics and Communication Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions  
All Questions Carry Equal Marks

- 1.a) Explain in detail the need for Telecommunication Networks.
- b) Describe Non – blocking and blocking cross bar switching configuration.
- c) A 1000 line exchange is partly folded and partly non-folded. Forty percent of the subscribers are active during peak hour. If the ratio of local to external traffic is 4:1, estimate the number of trunk lines required.
  
- 2.a) Explain:
  - i) Busy hour
  - ii) Call completion rate
  - iii) Busy hour calling rate
  - iv) Traffic intensity.
- b) In a TS switch,  $M = 128$ ,  $N = 16$  and the number of subscribers connected to the system is 0.1 MN. Determine the blocking probability of the switch if.
  - i) All the subscribers are active at the same time,
  - ii) Only 50% of the subscribers are active simultaneously.
  
- 3.a) What is the purpose of multi stage network? Discuss about four stage network and its applications.
- b) In an exchange the calls arrive at the rate of 1100 calls per hour, with each call holding for duration of three minutes. If the demand is serviced by a trunk group of 50 lines, determine the GOS.
  
- 4.a) Explain about the popular methods employed in time division switching?
- b) Distinguish between phased and slotted operation of time division time switch
  
- 5.a) Draw the block diagram of Common Control Switching System and explain each block.
- b) Distinguish between input controlled and output controlled switch? How is it Different from memory controlled switch?
  
6. Compare the following signaling techniques.
  - a) In – channel and common channel signaling.
  - b) In – band and out – band signaling.
  - c) Channel associated and channel non associated signaling.
  
- 7.a) Comparison of Bus and Ring Networks.
- b) Explain BISDN reference model.
- c) Distinguish between Asynchronous and synchronous protocols.
  
- 8.a) Describe frame format of ISDN.
- b) Explain in detail the charging plan for Telecommunication Networks.