

III B.Tech II Semester(R05) Supplementary Examinations, January 2010
TELECOMMUNICATION SWITCHING SYSTEMS AND NETWORKS
(Electronics & Communication Engineering)

Time: 3 hours Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks



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1. (a) Explain about the crossbar exchange organization with the help of neat block diagram ?
(b) Define the following terms
 - i. Symmetric network
 - ii. Folded network
 - iii. Non blocking network
 - iv. Blocking network.

[8+8]
2. (a) What are the different modes of configuring dual processor architecture? Explain.
(b) Show how a general semaphore can be implemented using binary semaphores.

[8+8]
3. (a) What are the major components of telecommunication network? Explain in detail about subscriber loop systems.
(b) An exchange uses a -40 V battery to derive subscriber lines. A resistance of 250Ω is placed in series with the battery to protect it from short circuits. The subscribers are required to use a standard telephone set which offers a d.c. resistance of 50Ω . The microphone requires 23mA for proper functioning. Determine the farthest distance from the exchange at which a subscriber can be located if 26 AWG conductor is used.[8+8]
4. (a) Define overload traffic and explain different ways of handling it.
(b) Over a 20-minute 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.[8+8]
5. (a) Explain the functions and features of data communication network components.
(b) Discuss peer to peer client / server networks.

[8+8]
6. (a) Define open system interconnection. Name and explain functions of each of the Layers of the OSI model.
(b) Describe the operation of star, bus ring and hybrid Network topologies

[8+8]
7. (a) What is primary rate interface ? Explain.
(b) What is basic rate interface ? Explain ?

[8+8]
8. (a) Explain the operation of cable modem
(b) Discuss features of HFC Networks.

[8+8]