

R09

Code No: D6104, D6504

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

M.Tech II - Semester Examinations, March/April 2011

**TELECOMMUNICATION SWITCHING SYSTEMS AND NETWORKS
(COMMON TO COMMUNICATION SYSTEMS, WIRELESS & MOBILE
COMMUNICATIONS)**

Time: 3 hours

Max. Marks: 60

**Answer any five questions
All questions carry equal marks**

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1. a) With the help of a suitable diagram explain the principle of operation of cross bar switch.
b) What are the drawbacks of non-blocking cross bar configuration? How are they eliminated?
c) What are the elements of a switching system and explain the functions of each element [4+4+4]
2. a) Briefly explain the three modes of operation of a dual processor architecture.
b) Derive the expressions for unavailability of single processor system. [6+6]
3. a) Describe the structure and operation of time division space switch.
b) Explain the principle of operation of Time Slot Interchange (TSI). [6+6]
4. a) Discuss the switching hierarchy and routing methods used in telecommunication networks.
b) Explain the following:
i) Numbering plan. ii) Signaling Techniques. [6+6]
5. a) Explain polling, ALOHA and CSMA/CD access methods used in BUS Networks.
b) Compare Bus and Ring Networks. [6+6]
6. a) Design a two stage switching network for connecting 200 incoming trunks to 200 outgoing trunks.
b) Explain the features of non blocking and rearrangeable networks. [6+6]
7. Write a brief note on the following:
a) Congestion.
b) Queuing systems. [6+6]
8. a) Describe the network and protocol architecture of ISDN.
b) Explain the features of ISDN channels and Interfaces. [6+6]
