

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**ME - SEMESTER-II(Old course)• EXAMINATION (Remedial) – WINTER- 2015**

**Subject Code: 1720401**

**Date: 09/12/2015**

**Subject Name: Telecom Switching System, Networks and Network Management**

**Time:2:30 pm to 5:00 pm**

**Total Marks: 70**

**Instructions:**

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

- Q.1
- (a) i) Differentiate between Folded and Non-folded network. (03)
  - ii) In a 100 line folded network, how many switching elements are required for non-blocking operation? (02)
  - iii) List major Telecommunication Networks (02)
  - (b) Explain the  $N \times N$  three stage switching network. Draw the Lee's graph to discuss its blocking probability. Also draw the three-stage non-blocking configuration. (07)

- Q.2
- (a) i) What is a basic switching structure? (02)
  - ii) Compare Input-controlled and Output-controlled Time Division Space Switch. (05)
  - (b) i) Discuss three-stage combination switching. (03)
  - ii) A TST switch supports 32 trunks of 32 channels each. A time expansion/concentration factor of 2 and a single-space switch are used. What is the Blocking probability of the switch if the channel loading is 0.9E(Erlang) per channel? Determine cost of the switch. (04)

**OR**

- (b) i) Mention different categories of enhanced services. Briefly discuss three party conferencing connection. (04)
  - ii) Describe 5-stage switching network. (03)
- Q.3
- (a) i) What are different parameters necessary for modeling of switching Systems ? (03)
  - ii) Explain briefly Markov Processes. (02)
  - iii) A switching system has 5000 subscribers with a traffic intensity of 0.1E per subscriber. If there is a sudden spurt in the traffic, increasing the average traffic by 60%, what is the effect on the arrival rate ? (02)
  - (b) Derive the blocking probability of lost call clear system with infinite sources. (07)

- OR**
- Q.3 (a) i) Explain TCP/IP based networks. (03)  
ii) Compare OSI and IP layers in brief. (04)  
(b) i) What are different LAN topologies? (03)  
ii) Write a short note on ATM.Network Management. (04)
- Q.4 (a) Discuss various organization models of SNMP management and show the structure of Management Information.. (07)  
(b) Compare GetRequest and GetNextRequest PDU operation of SNMPv1. (07)
- OR**
- Q.4 (a) Enumerate the challenges in managing the network. What is the goal of network management and discuss various network management functions. (07)  
(b) What are the Internet MIB-II groups of SNMPv1? Discuss function of each group. (07)
- Q.5 (a) Discuss migration schemes from SNMPv1 to SNMPv2. (07)  
(b) Discuss SNMPv3 architecture. (07)
- OR**
- Q.5 (a) What is Remote Monitoring? Explain ATM Remote monitoring with the help of a ATM network reference model. (07)  
(b) Discuss RMON1 groups and functions with the help of a bloc diagram. (07)