USN | | | | | | | | | | 10EC82
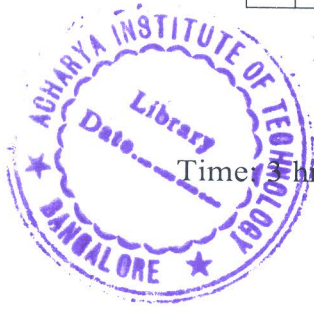
Eighth Semester B.E. Degree Examination, June/July 2019
Digital Switching Systems

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions, selecting atleast TWO questions from each part.*

PART – A

1   a.   With neat block diagram, explain the national telecommunication network.   (06 Marks)
    b.   Explain the different network structures.   (04 Marks)
    c.   Explain the principle of operation of a four wire circuit with neat diagram.   (10 Marks)

2   a.   Explain the basic functions of a switching system.   (08 Marks)
    b.   Write short note on cross bar switch.   (06 Marks)
    c.   Explain with diagram principle of reed relay switch.   (06 Marks)

3   a.   Define the following terms:
         (i)   Traffic Intensity
         (ii) Congestion
         (iii) Busy hour   (06 Marks)
    b.   Derive expression for Erlang's Lost call formula with explanation of assumption made?
                                                                                         (10 Marks)
    c.   A group of 5 trunks is offered 2E of traffic. Find
         (i)   Grade of service
         (ii) Probability that only one trunk is busy
         (iii) Probability that only one trunk is free
         (iv) Probability that atleast one trunk is free.   (04 Marks)

4   a.   What is Grading? Explain types of grading?   (10 Marks)
    b.   Design a strictly non blocking network for 100 incoming and 100 outgoing trunks using 3-stage network.   (04 Marks)
    c.   Explain the two stage network with equations.   (06 Marks)

PART – B

5   a.   Explain the principle operation of T-S-T network and S-T-S network.   (10 Marks)
    b.   Write short note on PBX switches.   (04 Marks)
    c.   Explain frame alignment in detail.   (06 Marks)

6   a.   Explain basic software architecture of typical Digital switching system?   (10 Marks)
    b.   Describe the feature flow diagram with flow charts.   (10 Marks)

7   a.   Explain the methodology used for reporting and correcting of field problems.   (10 Marks)
    b.   Write short note on:
         (i) Embedded patcher concept   (ii) Firmware software coupling   (10 Marks)

8   a.   Explain
         (i) Line to trunk inter IC OGT call   (ii) Line to trunk intra IC OGT call   (10 Marks)
    b.   Describe the characteristics of DSS?   (10 Marks)

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