Eighth Semester B.E. Degree Examination, June / July 2014
Digital Switching Systems

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1 a. Explain the principle operation of a four wire circuit with neat diagram.   **(08 Marks)**
   b. Express the following power levels in dBm and dBw. i) 1 mW   ii) 1 W   iii) 2 mW
      iv) 100 mW.   **(04 Marks)**
   c. Explain the PCM primary multiplex with neat diagram, (30 channel or 24 channel frame
      format any one).   **(08 Marks)**

2 a. Write a short note on crossbar system.   **(06 Marks)**
   b. With a neat block diagram, explain the term BORSCHT.   **(06 Marks)**
   c. With the help of a neat diagram, explaint the Intra LM call and Inter LM call processing.
                                                                                      (08 Marks)

3 a. Define the following terms (any thre):
      i) Traffic intensity   ii) Grade Of Service (GOS)   iii) Busy hour
      iv) Blocking probability   v) Blocking network.   **(06 Marks)**
   b. In an average, during the busy hour, a company makes 180 outgoing calls of average
      duration of 3 minutes. It receives 400 incoming calls of average duration 6 minutes. Find :
      i) The outgoing traffic   ii) Incoming traffic   iii) Total traffic.   **(04 Marks)**
   c. Derive an expression for iterative form of Erlang's LOST CALL FORMULA with
      explanation of assumptions made.   **(10 Marks)**

4 a. What is grading? Explain types of grading.   **(08 Marks)**
   b. Compare the features of single stage and multi stage network.   **(08 Marks)**
   c. Design a grading for 16 outlets using switches with 10 outlets. Draw grading diagram.
                                                                                      (04 Marks)

PART – B

5 a. Explain the principle operation of T-S-T network and S-T-S network.   **(12 Marks)**
   b. Network has 50 incoming and 50 outgoing PCM highway. Each conveying 40 channels. The
      required grade of service is 0.7. Find the traffic capacity of network mode (1) and mode (2).
                                                                                      (08 Marks)

6 a. Explain the basic software architecture of a typical digital switching system. **(10 Marks)**
   b. What is a feature flow diagram? Explain with flow charts.   **(10 Marks)**

7 a. Explain the methodology used for reporting and correcting of field problems.   **(10 Marks)**
   b. Explain the strategy used for improvement of software quality.   **(10 Marks)**

8 a. With a neat flow chart explaint the simple call establishment process.   **(12 Marks)**
   b. Write short notes on any two of the following:
      i) Reliability analysis
      ii) Recovery strategy.
      iii) Network Control Processor (NCP).   **(08 Marks)**

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