

ONE TIME EXIT SCHEME

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BANGALORE - 560 037

10TE55

Fifth Semester B.E. Degree Examination, April 2018
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. List and discuss the different network services for telecommunication. (04 Marks)
b. Explain the operation of four-wire circuit used in two way transmission system. (08 Marks)
c. Explain the principle operation of time-division multiplex transmission. (08 Marks)
- 2 a. List the advantages and disadvantages of message switching and circuit switching. (04 Marks)
b. Explain the working of distribution frame in strowger exchange. (06 Marks)
c. Draw the block diagram of basic central office linkages and explain individual blocks. (10 Marks)
- 3 a. Define the following terms:
(i) Traffic (ii) Congestion (iii) Lost call (iv) Queuing system (04 Marks)
b. A group of 20 trunks provides a grade of service of 0.01 when offered 12E of traffic:
i) How much is the grade of service improved if one extra trunk is added to the group?
ii) How much does the grade of service deteriorate if one trunk is out of service? (06 Marks)
c. Derive interactive form of Erlang's lost call formula. (10 Marks)
- 4 a. What is grading? Explain homogeneous grading. (06 Marks)
b. Explain the working of three stage switching network. (08 Marks)
c. Design a two stage switching network for connecting 200 incoming trunks to 200 outgoing trunks. (06 Marks)

PART – B

- 5 a. With a diagram explain the principle operation of time switches. (10 Marks)
b. Draw and explain the block diagram of frame alignment of PCM signals entering a digital exchange. (10 Marks)
- 6 a. Draw and explain the block diagram of basic software architecture used in digital switching system. (10 Marks)
b. Explain the classification of digital switching software. (10 Marks)
- 7 a. Write short notes on the following:
i) System outage and its impact on DSS reliability
ii) Growth of digital switching system central office
iii) Switching system maintainability metrics (12 Marks)
b. Explain the interface of digital switching central office. (08 Marks)
- 8 a. Explain in brief generic switch software architecture. (08 Marks)
b. List and explain common characteristics of digital switching system. (06 Marks)
c. Write a short note on reliability analysis. (04 Marks)

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