



10EC82

Eighth Semester B.E. Degree Examination, July/August 2021
Digital Switching Systems

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. With neat diagrams, discuss : i) subdivision of exchange area ii) multi exchange area. (08 Marks)
b. Define Talker and Listener's echoes encountered in 4 wire circuit. And write their effect on speaker and listener. (04 Marks)
c. With neat diagram(s) explain the FDM 12 channel carrier system. (08 Marks)
- 2 a. Define the Marker, explain how to obtain link frame network supporting 10×10 trunks with a neat diagram. (08 Marks)
b. What is outside and inside plant? Expand BORSCHT. (04 Marks)
c. With the help of neat diagram, explain the intra Lm and inter Lm cal processing. (08 Marks)
- 3 a. Derive an expression for the 1st Erlang distribution for the lost call system with four assumptions. (08 Marks)
b. On average, one call arrives every 5 seconds. During a period of 10sec, what is the probability that i) No call arrives ii) One call arrives iii) Two calls arrives iv) More than two calls arrives. (08 Marks)
c. Define the terms :
i) Traffic intensity
ii) Occupancy of trunk
iii) Congestion
iv) Grade of Service (GoS). (04 Marks)
- 4 a. Design a grading for connecting 20 trunks to switches having 10 outlets, with necessary diagram(s). (10 Marks)
b. What is link system? With neat diagram explain the three modes of classifying the GoS of link system. (10 Marks)
- 5 a. Explain the constructors and operation of Space – Time – Space (S-T-S) switching network with neat diagram. (10 Marks)
b. Discuss the synchronization or frame alignment of PCM signals entering the digital exchange (How) with neat diagram. (10 Marks)
- 6 a. Explain the software architecture for level-2 control of DSS with neat diagram. (10 Marks)
b. Explain digital switching system (DSS) software classification with neat diagram. (10 Marks)
- 7 a. Discuss five types of metrics used for the maintenance of DSS. (10 Marks)
b. What is system outage? Explain four types of system outages. (06 Marks)
c. Define embedded patching and defect analysis. (04 Marks)
- 8 a. Explain Lien-to-Line Intra IC call of a digital switch with a neat diagram. (10 Marks)
b. Explain system recovery of level-1 of generic DSS model with an example. (06 Marks)
c. Write a short note on reliability analysis. (04 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.