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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.***

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.

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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