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10EC82

Eighth Semester B.E. Degree Examination, Aug./Sept.2020

Digital Switching System

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. With a neat block diagram, explain the National Telecommunication Network. **(10 Marks)**

b. Explain various types of Network Structures. **(06 Marks)**

c. What are the standards of Telecommunication System? **(04 Marks)**

2 a. Explain with a neat diagram the distribution frames in stronger switching exchange. **(10 Marks)**

b. Explain with a neat diagram the Intra LM calls and incoming calls in Digital Switching System. **(10 Marks)**

3 a. During a busy hour, 1200 calls were offered to a group of trunks and 6 calls were lost. The average call duration was 3 min. Find:

(i) Traffic offered
(ii) Traffic carried
(iii) Grade of Service
(iv) The total duration of the periods of congestion **(10 Marks)**

b. Derive an expression for the Erlang's lost call formula from the basic principles. **(10 Marks)**

4 a. What is Grading? Explain in brief the design of a progressive grading. **(08 Marks)**

b. Obtain the expression for minimum number of cross points for two stage network with N number of incoming tanks and N number of outgoing trunks and also draw the two stage switching network. **(12 Marks)**

PART – B

5 a. Explain with the help of neat diagram the operation of T-S-T switching network and time switch. **(14 Marks)**

b. Explain the frame alignment of PCM signals in Digital exchange. **(06 Marks)**

6 a. With a neat diagram, explain software linkages during a call. **(10 Marks)**

b. Explain the flow diagram for subscribers features and call forwarding. **(10 Marks)**

7 a. Describe various organizational interfaces of a typical digital switching system central office. **(10 Marks)**

b. Explain briefly the methodology for reporting and correction of field problems in digital switching system. **(10 Marks)**

8 a. Explain the basic steps necessary to complete a simple call through a digital switching system. **(10 Marks)**

b. Explain some common characteristics of Digital Switching System. **(10 Marks)**

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