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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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