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10TE55

Fifth Semester B.E. Degree Examination, Dec.2017/Jan.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. Explain in brief, with a neat diagram different Network configurations and structures. **(08 Marks)**

b. Explain Regulations and Standards in a Telecommunication Network. **(06 Marks)**

c. With a neat diagram, explain Time division multiplexing. **(06 Marks)**

2 a. Describe the functions of switching system. **(06 Marks)**

b. With a neat diagram, explain basic central office linkages. **(06 Marks)**

c. Explain Intra Line module and Inter Line module calls. **(08 Marks)**

3 a. Define the following terms : i) Traffic Intensity ii) Busy hour iii) Last call system iv) Grade of service v) Pure chance traffic vi) Statistical equilibrium. **(06 Marks)**

b. Derive Second Erlang's distribution formula. **(08 Marks)**

c. A group of 20 trunks provides a grade of service of 0.01 when offered 12 E of traffic :

i) How much is the GoS improved if one extra trunk is added to the group?

ii) How much does the GoS deteriorate if one trunk is out of service? **(06 Marks)**

4 a. What is Grading? Describe various types of gradings. **(06 Marks)**

b. Differentiate between Single stage and Multistage networks. **(06 Marks)**

c. Design a two – stage switching network for connecting 200 incoming trunks to 200 outgoing trunks. **(08 Marks)**

PART – B

5 a. Explain Time – Space – Time switch, with neat diagram. **(06 Marks)**

b. A T – S – T network has 20 incoming and 20 outgoing PCM highway, each conveys 30 channels. The required GoS is 0.01 , 0.02 , 0.001 , 0.005. Find the traffic capacity of network in mode 1 and mode 2. **(08 Marks)**

c. With a neat diagram, explain frame alignment of PCM signals. **(06 Marks)**

6 a. Explain in brief Basic software architecture of different levels used in digital switching system. **(14 Marks)**

b. With a suitable diagram, explain software linkages during a call. **(06 Marks)**

7 a. Explain the interfaces of digital switching central office. **(10 Marks)**

b. Highlight the strategy for improving software quality. **(10 Marks)**

8 a. With a neat diagram, explain generic switch software architecture. **(06 Marks)**

b. Explain in brief common characteristics of Digital Switching System. **(08 Marks)**

c. Write short note on Recovery Strategy. **(06 Marks)**

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