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15EC654

Sixth Semester B.E. Degree Examination, June/July 2018
Digital Switching Systems

Time: 3 hrs.   Max. Marks: 80

Note: *Answer any FIVE full questions, choosing one full question from each module.*

Module-1

1 a. Explain in detail with a neat diagram of different network structures.   (08 Marks)
   b. Draw a neat diagram of four-wire circuit and explain its working.   (08 Marks)

OR

2 a. Differentiate between TDM and FDM transmission network, with suitable diagrams.
                                                                                        (08 Marks)
   b. Explain in details PDH and SDH with neat diagrams.   (08 Marks)

Module-2

3 a. Explain in brief distributed systems with neat diagrams.   (08 Marks)
   b. Explain different functions of switching systems.   (08 Marks)

OR

4 a. Explain in detail building blocks of a digital switching of system. With neat block diagrams.
                                                                                        (08 Marks)
   b. Explain in brief basic call processing with diagrams.   (08 Marks)

Module-3

5 a. Define the following:
      (i) Busy hour   (ii) Grade of service   (iii) Holding time
      (iv) Statistical equilibrium   (08 Marks)
   b. Derive an expression for the second Erlang's distribution starting from basic principles.
                                                                                        (08 Marks)

OR

6 a. Design a progressive grading system connecting 20 outgoing trunks and having a switch
      with availability of 10. Draw the grading diagram.   (08 Marks)
   b. Design a three stage network for 100 incoming trunks to 400 outgoing trunks. Draw the
      diagram.   (08 Marks)

Module-4

7 a. With a neat sketch, explain space switch in detail.   (08 Marks)
   b. Explain in brief frame alignment with neat sketch. Explain different types of
      synchronization networks.   (08 Marks)

OR

8 a. With a neat diagram, explain Level 1, Level 2 and Level 3 control of a digital switching
      system.   (08 Marks)
   b. What is feature flow diagram? Draw feature flow diagram for feature activation, feature
      operation and feature deactivation for a call forwarding feature.   (08 Marks)

Module-5

9 a. Explain the interface of digital switching central office with neat diagram. **(08 Marks)**
   b. Highlight the strategy for improving software quality. **(08 Marks)**

OR

10 a. Explain generic switch software and hardware architecture. With respect to suitable diagram. **(08 Marks)**
   b. Explain recovery stage of initialization process with examples. **(08 Marks)**

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