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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: (08 Marks)

(i) Busy hour
(ii) Grade of service
(iii) Holding time

(iv) Statistical equilibrium
- 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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