

CRASH COURSE

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10TE55

Fifth Semester B.E. Degree Examination, May 2017

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. Explain with a neat diagram, principle operation of four wire circuits. (08 Marks)
b. An amplifier has an input resistance of 600Ω and a resistive load of 75Ω . When it has an r.m.s input voltage of 100 m.v, the r.m.s output current is 20 mA. Find the gain in dB. (06 Marks)
c. Differentiate between TDM and FDM transmission network, with suitable diagrams. (06 Marks)
- 2 a. Explain the functions of a switching system. (08 Marks)
b. Explain the digital switching system fundamentals with neat diagram. (08 Marks)
c. Differentiate between circuit switching and message switching. (04 Marks)
- 3 a. Derive the expression for iterative form of Erlang's lost call formula. (10 Marks)
b. During the busy hour, a group of trunks is offered 100 calls having an average duration of 3 minutes. One of the calls fails to find a free trunk. Find (i) Traffic offered (ii) Traffic carried (iii) Traffic lost (iv) Grade of serve. (04 Marks)
c. Explain the following:
(i) Traffic (ii) Grade of service (iii) Congestion. (06 Marks)
- 4 a. Explain grading. Explain with a neat diagram, skipped and homogeneous grading. (08 Marks)
b. With the help of neat diagram, derive an expression for minimum number of cross points required for three stage network with incoming trunks greater than outgoing trunks. (12 Marks)

PART – B

- 5 a. Explain with a neat diagram, frame alignment of PCM signals entering a digital exchange. (10 Marks)
b. A T-S-T network has 20 incoming and 20 outgoing PCM highways, each conveying 30 channels. The required grade of service is 0.01. Find the traffic capacity of the network for mode 1 and mode 2. (10 Marks)
- 6 a. Explain with a diagram classification of digital switching software. (10 Marks)
b. Explain with a diagram software linkages during a call. (10 Marks)
- 7 a. Explain with a neat diagram, a strategy for improving software quality. (12 Marks)
b. Draw a typical problem reporting system and explain the functions of each block. (08 Marks)
- 8 a. Explain the recovery strategy. (06 Marks)
b. Explain some common characteristics of digital switching system. (08 Marks)
c. Explain analysis report for DSS. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.