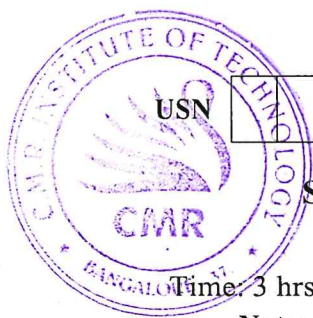


# CBCS SCHEME



15EC654

## Sixth Semester B.E. Degree Examination, Aug./Sept. 2020 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 the hierarchy of a national public switched telecommunication network with the help of a neat diagram. (10 Marks)
- b. Explain the operation of four wire circuit used in the two way transmission system. (06 Marks)

OR

- 2 a. Explain different network structures in brief. (06 Marks)
- b. Explain in brief power levels encountered in telecommunication transmission system. (06 Marks)
- c. Explain the power levels in dBm and dBw. i) 1mw ii) 1w iii) 2mw iv) 100 mw. (04 Marks)

### Module-2

- 3 a. Explain in brief what do you mean by message switching and circuit switching. (04 Marks)
- b. Explain stored program control switching systems with diagram. (04 Marks)
- c. With the help of a neat diagram. Explain the intra LM call processing. (08 Marks)

OR

- 4 a. Explain in brief different functions of a switching system. (08 Marks)
- b. Explain distribution frames in stronger exchange with neat diagram. (08 Marks)

### Module-3

- 5 a. Define and explain the following terms :  
i) Traffic intensity ii) Grade of service iii) Busy hour iv) Occupancy. (06 Marks)
- b. Derive an expression for the second erlangs distribution formula from basic principles. (10 Marks)

OR

- 6 a. What is grading? Explain different types of grading. (06 Marks)
- b. Design a 3 stage network for 100 incoming and 100 outgoing trunks. Draw the diagram and derive the expressions used. (10 Marks)

### Module-4

- 7 a. Discuss the need for frame alignment in time division switching networks. (08 Marks)
- b. Explain single ended and double ended unilateral and bilateral synchronization system. (08 Marks)

OR

- 8 a. Explain in brief basic software architecture used in digital switching systems. (10 Marks)
- b. Explain in brief call models and connect sequence. (06 Marks)

### Module-5

- 9 a. Explain in brief common characteristics of (DSS) Digital Switching System. (08 Marks)
- b. Explain the organizational interfaces of typical DSS with neat diagram. (08 Marks)

OR

- 10 a. Explain in brief generic switch hardware architecture. (08 Marks)
- b. Explain with a neat diagram a strategy for improving software quality. (08 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.

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