CBCS SCHEME

USN | | | | | | | | | |

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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