

**TEC-603**

**140**

**Even Semester Examination - 2017**

**B.TECH. (VI SEMESTER)**

**TELECOMMUNICATION SWITCHING  
SYSTEM**

**Time: 03:00 Hours**

**Max Marks : 100**

**Note:** Attempt all questions. All question carry equal marks. In case of misprinting, assume suitable data.

1. Attempt any four of the following: (5x4=20)
- (a) How is Circuit Switching different from Message Switching? Explain.
  - (b) Explain the difference between TDM and FDM.
  - (c) Explain the various functions of a Switching System. Explain the function of Register-Translator-Sender.
  - (d) Explain the structure and working of magnet and armature arrangement of the crossbar switch.
  - (e) Draw the waveforms when the digital data 10011011 is to be transmitted using unipolar RZ.

Unipolar NRZ, Bipolar RZ and Manchester formats.

(f) Explain timing recovery with Phase locked loop.

2. Attempt any four of the following: (5x4=20)

(a) Draw the General Trunking diagram of a Telephone Exchange and explain its functionality.

(b) Explain the concept of Packet Switching and Packet format.

(c) Explain the Space division switching in detail.

(d) Explain zero loss switching.

(e) Explain the significance and use of the frames.

(f) Define PCM modem.

3. Attempt any two of the following: (10x2=20)

(a) Explain the Worst Case Scenario and derive the expression for minimum number of Cross Points for multi stage switching



(b) Explain the Folded Four Wire Switching with the help of the diagram. What is ' $N_p$ '. What are the advantages of the DCS over the manual cross connect system.

(c) Define Traffic characterization. Explain arrival distribution and Hold time distribution mathematically.

4. Attempt any two of the following: (10x2=20)

(a) Explain the concept of Lost calls Cleared System with finite Subscribers and derive the necessary blocking probability equation.

(b) What are BD processes? Explain in detail and derive the Expression for Steady State Condition.

(c) Explain 3 stage switching with total no. of Cross points used in this system.

5. Attempt any two of the following: (10x2=20)

(a) Explain the sequence of operations that a switching system performs. Compare the

CCITT No. 7 system with OSI model and its operations and HDLC.

(b) Define ISDN. Explain ISDN basic rate access architecture.

(c) What is SONET. Explain STS-1 frame with each overhead and payload.

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