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Paper Id:

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Sub Code:NEC-041

Roll No.

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B. TECH
(SEM-VIII) THEORY EXAMINATION 2017-18
ELECTRONICS SWITCHING

*Time: 3 Hours**Total Marks: 100*

- Note:** 1. Attempt all Sections. If require any missing data; then choose suitably.
 2. Any special paper specific instruction.

SECTION A

1. **Attempt *all* questions in brief.** **2 x 10 = 20**
- a. Define the basic function of uniselector.
 - b. Listed the limitations of Manual Switching System.
 - c. What is the digital switching?
 - d. Write the Erlang's ideal grading formula.
 - e. Define the grade of service for any exchange.
 - f. Define: Blocking and Queuing.
 - g. Define: Reliability and Availability.
 - h. Explain the overlap signaling.
 - i. Listed the advantages of ATM.
 - j. Define: Flow control and Packet format.

SECTION B

2. **Attempt any *three* of the following:** **10 x 3 = 30**
- a. Discuss the classification of switching system. In what way stored program control is superior to hard wired control.
 - b. Differentiate between single and multiple stage switching networks. Discuss the blocking conditions of two stage network.
 - c. With the help of state transition diagram, explain a birth death process, in short, with reference to a telecommunication network.
 - d. What do you mean by distributed stored program control? Describe the three levels processing of distributed SPC.
 - e. Draw and explain the 16 x 16 banyan switching fabric.

SECTION C

3. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) (i) Give the classification of switching techniques used in PSTN and explain in brief.
 (ii) Differentiate between common control and direct control.
 - (b) Draw the block diagram showing the organization of crossbar exchange and brief explain the operation.
4. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) What do you mean by echo? Explain the operation of echo suppressors or cancellers? Where is it used?
 - (b) (i) Explain the necessity of combination switch.
 (ii) Differentiate between time division switching and space division switching.

5. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) (i) Discuss the network traffic load variation hour by hour and day by day.
(ii) During a 2 hour busy period, 2400 calls arrive at an exchange. Average holding time per call is 2 min. What is the traffic load in
i. Erlang's ii. CCS.
- (b) (i) Explain the delay line system in telecom traffic.
(ii) A time assigned speech interpolation system has 10 channels and 20 sources connected to it. What is the probability of clipping if the activity factor for each source is 0.4?
6. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) What do you mean by common channel signaling? Discuss its advantages and disadvantages.
- (b) How the stored program control concept is being used in electronic switching system?
7. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) What is ATM switching? How is it different from TDM circuit switch?
- (b) (i) Discuss the error free transmission in TCP/IP.
(ii) Draw and discuss the HDLC frame format.