Printed Pages: 02   **Sub Code: EEC-802**

Paper Id: 131239   Roll No. ◻◻◻◻◻◻◻◻◻◻◻

B TECH
(SEM-VIII) THEORY EXAMINATION 2018-19
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.   What do you mean by GOS?
   b.   Differentiate between automatic and manual exchange.
   c.   Define Blocking criteria of Telecommunication system.
   d.   What do you mean by out-band signaling?
   e.   What do you mean by High Availability?
   f.   Compare Loss system and Delay system.
   g.   Enlist the various signaling techniques used in telecom networks.
   h.   Enlist the features of HDLC.
   i.   What do you mean by signaling?
   j.   What do you understand by ATM?

SECTION B

2.   Attempt any *three* of the following: 10 x 3 = 30

   a.   (i) Discuss the evolution of digital switching system. Explain the block diagram
          of subscriber's line interface circuit for a digital exchange.
          (ii) What do you understand by Reed Electronic Systems? Explain.
   b.   Derive Lee's blocking probability expression.
   c.   Explain the Birth and Death process for telecommunication system with
          suitable diagram.
   d.   Discuss the different levels processing used in dual chain distributed control for
          distributed SPC.
   e.   (i)Using block diagram discuss the Frame relay service for LAN interconnects
          to implement a corporate wide area network.
          (ii) Draw TCP/P reference model. Explain how IP addressing is achieved.

SECTION C

3.   Attempt any *one* part of the following: 10 x 1 = 10

   (a)   (i)Discuss the blocking probabilities using Lee Graphs and define an expression
          for the blocking probability of three stage switch in terms of inlet utilization P.
          (ii)Describe message switching with telegraph lines. State the major limitations
          of manual switching system.
   (b)   (i) Give the classification of switching system. Compare the switching
          techniques used in PSTN.
          (ii) Design a strictly three stage non-blocking network for 100 incoming and
          100 outgoing trunks using minimum number of cross points.

EEC802

4. **Attempt any *one* part of the following:** 10 x 1 = 10

  (a) What do you understand by Automatic Switching System? Explain Space Division and Time Division Switching.

  (b) (i) How many time slot interchange modules are needed. for an STS switch with 128 primary TDM signal 30 voice channel per input ? Assume blocking to be less than 0.002 and the loading is 0.2 Erlang per channel and determine the complexity of the switch.

      (ii) Draw the functional blocks of a memory based time division switch and discuss the concept of time division time switching scheme.

5. **Attempt any *one* part of the following:** 10 x 1 = 10

  (a) (i) A rural telephone exchange normally experiences four call originations per minute. What is the probability that exactly 8 calls occur in an arbitrarily chosen interval of 30 seconds?

      (ii)Explain lost calls cleared systems with infinite and finite subscribers. Distinguish between grade of service and blocking probability.

  (b) What do you meant by delay system? Discuss the various element of queuing system.

6. **Attempt any *one* part of the following:** 10 x 1 = 10

  (a) Explain Common Channel Signaling with SS7 architecture. Explain the important features and frame structure of HDLC.

  (b) What do you understand by distribution stored program control? Describe three levels processing of distributed stored program control. Derive the formula for availability of single and dual processor architecture.

7. **Attempt any *one* part of the following:** 10 x 1 = 10

  (a) Write short note on the following:
      (i)   Cross Bar switching construction and working.
      (ii)   Reed Relay with construction and working.

  (b) (i) Explain packet switching. Explain Packet Formats for different applications and routing control.

      (ii) What do you understand by ATM? Discuss Input bus/ Output buffer ATM switch.

EEC802