

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 131802 Roll No.

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B.Tech.

(SEM. VIII) THEORY EXAMINATION 2013-14

ELECTRONICS SWITCHING

Time : 3 Hours

Total Marks : 100

Note : Attempt **all** questions. Each question carries equal marks.

1. Attempt any **four** parts of the following :

- (a) Explain point-to-point link networks for n entities.
- (b) Describe message switching with telegraph lines. State the major limitations of manual switching system.
- (c) Compare Step by Step and Crossbar Switching Systems.
- (d) Define BORSHET. Describe subscriber loop system. What are its applications ?
- (e) Explain electronic switching with neat sketch. What are various advantages and disadvantages of electronic switching ?
- (f) What do you understand by Reed Electronic Systems ? Explain Red Relays.

2. Attempt any **two** parts of the following :

- (a) What are functions of digital switching ? List the various advantages and disadvantages of digital switching over analog switching.
- (b) What do you understand by Automatic Switching System ? Explain Space Division and Time Division Switching.
- (c) What do you understand by digital cross - connect systems ? Differentiate between consolidation and distribution.

3. Attempt any **four** parts of the following :

- (a) What are various parameters of network traffic ? Draw and discuss the telecom traffic pattern during a normal working day.
- (b) Over a 10-minute observation interval, 20 users initiate calls. Total calls duration is 4800 seconds. Calculate the load offered to network by subscribers and average subscriber traffic.
- (c) Explain lost calls cleared systems with infinite and finite subscribers. Distinguish between grade of service and blocking probability.
- (d) A subscriber makes 4 phone calls for duration of 5 minutes, 4 minutes, 3 minutes and 2 minutes in one hour period. Calculate the subscriber traffic in erlangs (E), CCS and CM.

- (e) Explain delay line system in telecom traffic.
- (f) Find the blocking probability and implementation complexity of a STS switch.

4. Attempt any **two** parts of the following :

- (a) What do you understand by distributed stored program control ? Describe three level processing of distributed stored program control. Derive the formula for availability of single and dual processor architecture.
- (b) What do you mean by signaling ? Discuss classifications of signaling techniques.
- (c) Draw and discuss block diagram of common channel signaling. What are requirements of CCITT signalling system SST 7 ?

5. Attempt any **four** parts of the following :

- (a) Discuss the error free transmission of packets in TCP/IP. How IP addressing is achieved ?
- (b) What do you understand by Packet Switching ? Explain Packet Formats for different applications and routing control.
- (c) What do you understand by ATM ? Discuss Input bus/ Output buffer ATM Switch.
- (d) Explain the important feature and frame structure of HDLC.
- (e) Explain the concept of message switching and circuit switching in detail.
- (f) What do you mean by grade of service (GOS) and Blocking Probability P_B ?