

Roll No.

22153

**M.E. 2nd Semester (E.C.E.)
(Elective-II)**

Examination-May, 2014

SWITCHING SYSTEMS

Paper- MEEC-512

Time : 3 hours

Max. Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Attempt any **five** questions out of given eight.

1. (a) A fully connected n/w supports full duplex communication using unidirectional links. Show that the total number of links in such a n/w with n nodes, is given by $2 \times {}^nC_2$. 10

- (b) How are switching systems classified ?
How is stored program control superior
to hard wired control ? 10
2. (a) What is the significance of side tone in
telephone conversation ? 5
- (b) What is the significance of (S/N) ratio
being -3dB ? 5
- (c) What is the concept of statistical band
with sharing ? 5
- (d) In a 100-line folded network, how many
scratching elements are required for non-
blocking operation ? 5
3. (a) Explain the concept of SPC switching. 10
- (b) A busy tone does not imply that called
party is actually engaged in a
conversation. Explain. 10
4. (a) What are the basic approaches to the
designs of subscriber access to Strowger
systems ? Describe them. 10

- (b) "Numbering plan in a telephone network must be independent of call routing"? Why ? Explain. 10
5. (a) During a 2-hour busy period, 2400 calls arrive at an exchange. Average holding time per call is two minutes. What is the traffic load in (i) Erlangs (ii) CCS. 10
- (b) Differentiate between Markov and semi-Markov processes used for representation of traffic. 10
6. (a) Calls arrive at a tandem exchange with R trunks at the rate of λ . If the calls are distributed to each trunk with probabilities $P_1, P_2, \dots, P_R$, What is the request arrival rate at each trunk ? 10
- (b) What is blocking probability ? How it is calculated ? 10
7. (a) Explain what are data networks and protocols ? 10
- (b) What are current trends in digital switching systems ? Explain. 10

8. Write short notes on :

(a) ISDN

10

(b) Intelligent Networks.

10
