

Code: AE64 Subject: TELECOMMUNICATION SWITCHING SYSTEMS

- f. State transition diagram helps in
- (A) Determining the stability
 - (B) Defining behaviour of a system
 - (C) Arriving at number of switches required
 - (D) Arriving at Boolean expression
- g. Trunk circuits are used to
- (A) Provide sharing of channels by many users
 - (B) Number of exchanges required
 - (C) Connect many Switches
 - (D) Provide Data communication
- h. Common channel signalling helps in
- (A) Using separate channels for common bearers
 - (B) Providing signalling information to many bearers
 - (C) Reducing the number of channels
 - (D) Congestion
- i. ISDN uses signalling system
- (A) SS16
 - (B) SS7
 - (C) SS5
 - (D) SS2
- j. Link to Link layer comprises of
- (A) Physical, Data and Network layer
 - (B) Application, Presentation and session
 - (C) Network, Transport and Data
 - (D) Session, Transport and Network

**Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.**

- Q.2** a. Draw the schematic of a 1000 line strowger switching system and explain how subscribers get connected. (6)
- b. Explain the various design parameters of a switching system. (6)
- c. What are the advantages of a digital system over electromechanical system? (4)
- Q.3** a. What is the need to estimate the traffic in an exchange, how is it arrived at? (6)
- b. A switching system serves 10000 subscribers with a traffic intensity of 0.2 Erlangs per subscriber. If the traffic increases by 40%, what is the effect on the arrival rate? (4)

Code: AE64 Subject: TELECOMMUNICATION SWITCHING SYSTEMS

- c. What are the assumptions taken into account while arriving at a queuing system? Explain the need of finite Queuing and how this capacity is arrived at. (6)
- Q4** a. Define the following:
(i) Traffic capacity
(ii) Grade of service
(iii) Non Blocking network (6)
- b. Draw the schematic of a two stage network and explain its operation in providing reliable switching. (6)
- c. Design a three stage network that has 100 incoming line and 300 outgoing trunks. Also calculate the total cross points. (4)
- Q.5** a. Distinguish between Time division space switching and Space division time switching. (8)
- b. What are synchronisation networks? Draw schematic of synchronisation hierarchy of an integrated digital network. (4)
- c. What is the role of concentrators in a switching network? (4)
- Q.6** a. How call processing takes place in a switching system? Explain with example. (6)
- b. What is store program control? Give the organization of centralized SPC. Discuss the advantages of SPC automation in telephone switching. (4)
- c. What are application programs that run on an operating system? (6)
- Q.7** a. What are the various types of signalling used in a switching network? (6)
- b. Explain the various levels of CCITT signalling system number 7. (6)
- c. Describe High level Data link control protocol. (4)
- Q.8** a. How frame relay is different from X25 packet switching? (6)
- b. What are the various network topologies? Compare the ring configuration with bus configuration. (6)
- c. Explain the features of ATM and explain the principle of an ATM switch. (4)
- Q.9** Write short notes on:
(i) Numbering Plans for the ISDN Era.
(ii) PDN
(iii) Numbering Plan
(iv) Automatic Alternate Routing (16)