

B.E.Sixth Semester (Electronics Telecommunication /
Electronics Communication Engineering) (C.B.S.)
Telecommunication Switching Systems

P. Pages : 2

Time : Three Hours



NKT/KS/17/7384

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
 2. Solve Question 1 OR Questions No. 2.
 3. Solve Question 3 OR Questions No. 4.
 4. Solve Question 5 OR Questions No. 6.
 5. Solve Question 7 OR Questions No. 8.
 6. Solve Question 9 OR Questions No. 10.
 7. Solve Question 11 OR Questions No. 12.
 8. Due credit will be given to neatness and adequate dimensions.
 9. Assume suitable data whenever necessary.
 10. Illustrate your answers whenever necessary with the help of neat sketches.
 11. Use of non programmable calculator is permitted.

1. a) Draw and explain the trunking diagram of 1000 line exchange. 7
- b) What is cross bar switching system? Explain the principle of cross bar switching system, Give the advantages of cross bar system over strowger system. 7

OR

2. a) Describe manual switching in detail. 6
- b) Explain digital cross connect systems with neat diagram. 4
- c) Explain central battery exchange. 4
3. a) During the busy hour, 1200 calls were offered to a group of trunks and six calls were lost. The average call duration was 3 minutes. Find : 5
- i) The traffic offered
 - ii) The traffic carried
 - iii) The traffic lost
 - iv) The grade of service
 - v) The total duration of the periods of congestion.
- b) Explain Lost call system. 4
- c) Define the following terms. 4
- i) Busy hour
 - ii) Grade of service

OR

4. a) Write a short note on "Queues in tandem". 7
- b) Explain effect of various parameters on Traffic Performance. 6

5. a) Explain the principle of Gradings with the help of suitable diagrams. 7
 b) Explain call packing in switching network. 6
OR
6. a) Explain various call processing functions. 7
 b) Explain the terms reliability, availability and security with respect to switching systems. 6
7. a) Explain timing recovery : Phase Lock Loop (PLL) in network. 6
 b) Write a short note on :
 i) Jitter measurement 4
 ii) The concept of pulse stuffing with example. 3
OR
8. a) Explain network synchronization. List different approaches used in synchronizing a digital network. 6
 b) What is network management? Give its two considerations. 7
9. a) Explain Data Communication architecture. 3
 b) Draw and explain ISO - OSI reference model for data communication. 7
 c) Define the following terms : 4
 i) Protocol stacks.
 ii) Internetworking
OR
10. a) What is ISDN? Describe a typical ISDN arrangement giving simple block diagram. 7
 b) Write a short note on :
 Transmission Channels in ISDN. 3
 c) Give the concept of Broad band ISDN. 4
11. a) Describe frequency reuse. Why is it useful in cellular telephone systems? 7
 b) If a total of 33 MHz of bandwidth is allocated to a particular FDD cellular telephone system which uses two 25 KHz simplex channels to provide full duplex voice and control channels, compute the number of channels available per cell if a system uses, (a) four - cell reuse, (b) seven - cell reuse, and (c) 12 - cell reuse. 6
OR
12. a) List and describe the six essential components of a cellular telephone network. 6
 b) Explain interferences in cellular system. Give its types. 7
