

Total No. of Questions : 12]

SEAT No. :

P1144

[Total No. of Pages : 2

[4659] - 503
B.E. (E & TC)
Voice Network
(2003 Pattern) (Semester - I)

Time : 3 Hours]

[Maximum Marks : 100

Instructions to the candidates:

- 1) *Answers to the two sections should be written in separate answer books.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of logarithmic tables, slide rule, Mollier charts, electronics pocket calculator is allowed.*
- 5) *Assume suitable data, if necessary.*

SECTION - I

- Q1)** a) Draw and explain the principles of circuit switched and packet switched network. [8]
b) Compare in channel signaling with common channel signaling. [6]
c) Calculate the availability of dual processor system for a period of 12 years having MTBF = 2200 Hrs and MTTR = 5 Hrs. [4]

OR

- Q2)** a) What is SPC organization? Explain the types of SPCs in brief. [10]
b) Explain the design considerations of DTMF dialer. [8]
- Q3)** a) State and explain various measurement units used in traffic engineering. [8]
b) What is blocking probability? Define and explain the “Erlang C” formula for blocking probability. [8]

OR

- Q4)** a) The data collected from a customer line during a period of 100 minutes show a total of 12 active calls with call holding times as 87, 75, 54, 96, 48, 64, 12, 60, 47, 78, 99, 120 seconds respectively. Calculate the traffic capacity in Erlangs and CCS. [8]
b) Define and explain the following terms : [8]
i) Grade of service.
ii) Unavailability.

P.T.O.

- Q5)** a) With the help of neat diagram explain different services supported by ISDN. [8]
b) Describe the significance of B & D channel in ISDN. [8]

OR

- Q6)** a) What are the devices used in order to provide ISDN services? Explain each in detail. [8]
b) Explain in detail ISDN interfaces. [8]

SECTION - II

- Q7)** a) Compare various multiplexing technologies used in cellular networks. [8]
b) List different interfaces used in GSM system. Explain any two types. [8]

OR

- Q8)** a) Draw the architecture of GSM network and explain its functional entities. [8]
b) Explain what are the data services used in GSM system. [8]

- Q9)** a) State and explain in brief the orthogonal and pseudorandom codes used for CDMA. [8]
b) Compare GSM and IS - 95 CDMA architecture. [8]

OR

- Q10)** a) Write short notes on “Walsh Code”. [8]
b) Explain the significance of Pilot and Sync channel. [8]

- Q11)** a) Explain in detail DTMF generation and detection. [10]
b) Differentiate between H.323 and H.248 protocols. [8]

OR

- Q12)** a) What is VOIP? Explain any two applications of VOIP. [10]
b) Write short notes on voice over frame relay. [8]

