



## Department of Computer Science & Engineering

### QUESTION BANK

**Subject: DCCN**  
**Branch: III CSE I Semester**

**Faculty Name: C .Vasavi**

#### UNIT-I

1. What are the differences between peer-to-peer client/server networks and dedicated client/server networks.  
**Jun10,Set-3)**
2. What are the different types of data communication topologies? Explain.(**Jun-10,Set-1,2&4;Nov'09,set3&4)**
3. Explain probability of error and bit error rate (**Nov'09,Set-4)**
4. For an electronic device operating at 19 degrees centigrade with a bandwidth of 14 k Hz, determine the thermal noise power in watts and dBm (**Jun-10,Set-4)**
5. Give the brief description of amplitude shift keying, frequency shift keying, phase shift keying and quadrature amplitude modulation. (**Nov'09,Set-1)**
6. Define architecture? What is architectural model for OSI model and give the importance of each layer.  
(**Jun'09,Set2&4)**
7. Give a brief description of the following forms of noise: man-made, thermal, correlated and impulse.(**Jun'10,Set-1)**
8. What are the differences between the time domain modulation and frequency domain modulation(**Nov'09,Set-3)**
9. Discuss the design issues for layering.(**Nov'09,Set-2)**
10. Define the following terms with respect to the data communication circuits.a) Data comm. Circuits b) Station c)Source d) Transmitter e)Receiver f) Destination
11. Describe in detail about TCP/IP protocol suite.

#### UNIT-II

1. Describe open-wire transmission lines.(**Jun-10,Set-4)**
2. Describe the plenum and plenum cable.(**Jun-10,Set-3;Nov'01,set-2)**
3. What do you mean by parallel-conductor transmission lines?
4. Explain in brief.Explain about metallic transmission line losses.(**Jun-10,Set-1)**
5. Draw the block diagram of optical fiber communication system. Explain about each block in brief.
6. Discuss about mode of propagation and index profile.(**Nov'09,Set-3&4;Jun'10,set-2)**
7. List and explain various types of coupling losses associated with optical fibers.(**Jun-10,Set-4)**
8. What is optical detector and explain it's characteristics.(**Jun-10,Set-3;Nov'09,set-2)**
9. List and explain the advantages and disadvantages of optical fibers.
10. Define the following terms a)Transmission lines b)Guided transmission lines c)Transverse waves d)Longitudinal waves
11. Discuss the following terms. a)Refraction b)Refractive index c)Snell's law d)Critical angle
12. Write short notes on a)Single mode step index fiber b)Multimode step-index fiber c)Multimode graded index fiber

#### UNIT-III

1. Explain the primary components of single channel PCM system.(**Jun-10,Set-4)**
2. Define PCM line speed. Explain how to determine the pcm line speed.(**Jun-10,Set-1)**
3. What is frame synchronization? How is it achieved in a PCM-TDM system.(**Jun-10,Set-2;; Nov-09,Set-4&3)**
4. Describe the super frame and extended super frame TDM formats.(**Jun-10,Set-4)**
5. Describe T carrier systems.(**Jun-10,Set-3)**
6. Explain the relationship between dynamic range, resolution and no. of bits in PCM code.(**Nov-09,Set-4)**

7. Explain the differences between linear and non-linear PCM codes. **(Nov-09,Set-3)**
8. Compare and contrast Delta modulation PCM and Standard PCM. **(Nov-09,Set-2)**
9. Explain about North American Digital Multiplexing Hierarchy. **(Nov-09,Set-1&3)**
10. For the following bits sequence draw the timing diagram for UPRZ,UPNRZ,BPRZ: 1110010100. **(Nov-09,Set-4)**
11. Describe the basic concept of wavelength division multiplexing. List the advantages of WDM.
12. Compare and contrast wavelength division multiplexing and Frequency division multiplexing.

#### UNIT-IV

1. Determine the free space path loss for a frequency of 6 GHz traveling a distance of 50km.
2. List and explain the various parameters that effect the operation of microwave communication system. **(Jun10,Set-2)**
3. With a neat diagram explain the satellite communication system. **(Jun-10,Set-1)**
4. Describe the satellite orbits and orbital patterns. **(Jun-10,Set-3;; Nov-09,Set-2&3)**
5. List and explain the three forms of satellite multiple accessing arrangements. **(Jun-10,Set-4)**
6. What are the optical properties of radio waves. Explain in detail. **(Nov-09,Set-2&3)**
7. What is skip distance and explain its significance. **(Nov-09,Set-1)**
8. Explain wave attenuation, wave absorption and give relation between them.
9. Describe ground wave propagation space wave propagation and sky wave propagation?
10. Describe a geosynchronous satellite contrast the advantages and disadvantages of geosynchronous satellites.
11. Define the following terms. a)Natural satellite. b)Artificial satellite c)Communications satellite d)Transponder
12. Describe the Clark orbit. **(Nov-09,Set-4)**

#### UNIT-V

1. Briefly explain a basic message channel. **(Jun'10,set-1)**
2. Discuss about the call progress tones and signals. **(Jun'09,set-1)**
3. Discuss about different types of crosstalk. **(Jun'09,set-1;Jun'10,set-2)**
4. Briefly describe the basic function of a standard telephone set.
5. Briefly describe the steps involved in completing a local telephone call. **(Jun'10,set-4;Nov'09,set-3)**
6. Describe the basic operation of a cordless telephone and explain how it differs from a standard telephone.
7. What is the reference frequency for attenuation distortion? **(Jun'10,set-4;Nov'09,set-3)**
8. Describe the transmission characteristics of a local subscriber loop and also explain about loading coils and bridge taps.
9. Discuss about two-wire voice frequency circuit. **(Jun'10,set-3)**
10. Briefly describe about the facility parameters. **(Jun'10,set-3)**
11. Discuss about the following. a. Dial tone b. Dual tone multi frequency c. Dial pulsing
12. What is the difference between dB and dBm and also explain the following terms. a)dBmO b)dBm c) dBmnc

#### UNIT-VI

1. Briefly discuss about the frequency allocation in AMPS.
2. Define digital cellular telephone. Describe the advantages and disadvantages of digital cellular telephone compared to analog cellular telephone. **(Jun'10,set-3)**
3. Briefly describe the EIA/TIA interim standard Is-54.
4. Describe the TDMA scheme used with USDC. **(Jun'10,set-1)**
5. Explain the classifications of CDMA radiated power. **(Jun'10,set-2;Nov'09,set-4)**
6. Explain the USDC digital video channel. **(Nov'09,set-1)**
7. List the services offered by GSM and draw the system architecture of GSM. **(Jun'10,set-1&2;Nov'09,set-2&4)**
8. Explain the AMPS frequency allocation. **(Nov'09,set-2)**
9. Briefly explain about Iridium satellite system.
10. List the advantages and disadvantages of PCSS(Personal Comm Satellite System) **(Jun'09,set-4;Nov'09,set-3)**
11. Describe the CDMA format used with IS-95 **(Nov'09,set-1)**
12. Explain the operational features of CDMA. **(Nov'09,set-1)**

#### UNIT-VII

1. Explain three most common character codes for data communications.

2. Explain in detail about barcodes. **(Jun'10,set-3)**
3. Describe the data communication modem. **(Jun'10,set-2&4)**
4. Discuss the features of Bell system compatible modem. **(Jun'10,set-4;Nov'09,set-3)**
5. Explain in detail about ITU-T modem specifications V.29 and V.32. **(Jun'10,set-1)**
6. Explain the purpose of scrambler and descrambler circuits **(Jun'10,set-3)**
7. Write short notes on Vertical Redundancy Checking. **(Nov'09,set-1&3)**
8. What is the purpose of error detection? Explain any one error detection technique.
9. Explain the most common modulation methods used with 56k voice-band modem. **(Nov'09,set-2)**
10. Describe the characteristic of synchronous voice-band modems.
11. Explain the bar code format for code 39 and POSTNET.
12. What is checksum, explain various methods to calculate a check sum.
13. Write the differences between character and message parity.
14. With a suitable example explain the CRC method of error detection.
15. Compare and contrast asynchronous and synchronous serial data formats.
16. Write short notes on a) cable modems. b) probability of error and bit error rate.

### UNIT-VIII

1. Explain the operation of poll /select line discipline. **(Jun'10,set-1)**
2. Explain the ENQ/ACK line discipline. **(Nov'09,set-3)**
3. List and briefly explain any one of the datalink protocol functions.
4. Briefly describe character oriented and bit oriented protocols.
5. Explain two modes of data transmission. **(Jun'10,set-3)**
6. Describe how the XMODEM protocol works. **(Jun'10,set-3)**
7. Describe the polling sequence and the selection sequence for BSC.
8. Determine the BSC sequence for the following.
  - a) A general poll of station 7
  - b) A specific poll of station 7 at device 3
  - c) A selection of device 12 at station 6
9. What are the three standards of HDLC. **(Jun'10,set-4;Nov'09,set-2)**
10. Explain about Invert-on-zero encoding.
11. What are the three frame formats used with SDLC.
12. Explain SDLC loop operation. **(Nov'09,set-4)**
13. Describe the differences between synchronous and asynchronous protocols **(Nov'09,set-3)**