

Code No: P31053**RA****Set No: 1**

III B.Tech. I Semester Regular Examinations, November/December - 2012

DATA COMMUNICATION SYSTEMS

(Computer Science Engineering and Information Technology)

Time: 3 Hours**Max Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

1. (a) Discuss about the standard organizations of Data Communications.
(b) Mention the layers present in OSI model. Explain them, in brief.
2. (a) Explain the characteristics of Electromagnetic waves.
(b) What are the classifications of Transmission line? Explain any one of them.
3. (a) Draw and explain the technique of Pulse Code Modulation.
(b) Define Companding and signal voltage to quantization voltage ratio. Write notes on frame synchronization.
4. (a) Draw and explain the basic satellite communication system. What are the links present in it?
(b) Present the detailed description of Microwave Communication System.
5. (a) Describe the basic telephone call procedures.
(b) Draw the block diagram in a telecommunication network and explain each block.
6. (a) Explain the working principle of cellular telephone systems.
(b) Discuss about N-AMPS.
7. (a) What are the various data communications codes? Discuss about Bar codes.
(b) Differentiate asynchronous and synchronous voice-band modems with various performance parameters.
8. (a) Discuss about various data transmission modes.
Write notes on Synchronous Data-Link Protocols.

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Code No: P31053**RA****Set No: 2**

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DATA COMMUNICATION SYSTEMS

(Computer Science Engineering and Information Technology)

Time: 3 Hours**Max Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Compare the difference between Serial and Parallel Data Transmission techniques.
(b) What are the modes present in data flow? Explain them, in brief.
2. (a) Explain Metallic Transmission lines and mention the losses present in it.
(b) List out the Advantages & Disadvantages of optical fiber transmission.
3. (a) Differentiate linear & non linear PCM Modes.
(b) Discuss about Wavelength Division Multiplexing.
4. (a) Define and explain Electromagnetic Polarization.
(b) List out the optical properties of radio waves.
5. (a) What are the functions performed by subscriber line interface? Explain any one of them.
(b) Explain in detail about subscriber loop systems.
6. (a) How can the problems of AMPS overcome in GSM systems?
(b) Elaborate the importance of amplifier noise in cellular systems.
7. (a) Distinguish between error control and flow control.
(b) Explain the difference between LRC and CRC.
8. (a) Discuss about the different types of frames in HDLC protocol.
(b) Explain the design considerations of data link layer.

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RA

Set No: 3

III B.Tech. I Semester Regular Examinations, November/December - 2012

DATA COMMUNICATION SYSTEMS

(Computer Science Engineering and Information Technology)

Time: 3 Hours**Max Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

1. (a) Define noise? Explain about Electrical noise & Signal to noise ratio.
(b) Define Information Capacity. Explain about Analog modulation systems.
2. (a) Discuss about different modes of optical fiber transmission.
(b) What are the types present in Metallic Transmission lines? Explain.
3. (a) What is meant by companding? Explain the importance of it in PCM communication systems.
(b) Explain the Working Principle of Time Division Multiplexing System.
4. (a) Explain the effect of wave attenuation and absorption on wireless communication systems.
(b) Define and explain the terms.
(i) Inverse Square law (ii) Skip distance
5. (a) Explain in brief, various parameters involved in designing a telephone transmission system.
(b) Draw and explain subscriber loop interface circuit.
6. (a) Draw and explain the architecture of global system for mobile communication.
(b) Explain Cellular system with support of GSM.
7. (a) Explain about ITU-T voice band modem.
(b) Derive the transmitted frame from given data polynomial $X^9+X^7+X^4+X^3+X$ and generator polynomial X^4+X^2+1 .
8. (a) Explain the working of asynchronous data link protocols.
(b) What are the functions of data link protocol? Explain in brief.

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Code No: P31053**RA****Set No: 4**

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DATA COMMUNICATION SYSTEMS

(Computer Science Engineering and Information Technology)

Time: 3 Hours**Max Marks: 75**

Answer any FIVE Questions

All Questions carry equal marks

1. (a) Draw and explain the Analog Modulation System.
(b) Define Bit rate and Baud rate. Give the significance of information capacity.
2. (a) Sketch and explain the Optical fiber communication system block diagram.
(b) What are the losses present in Optical Fiber System? Explain.
3. (a) Draw and explain Frequency Division Multiplexing technique.
(b) Draw and explain the DPCM system.
4. (a) Differentiate between rays and wave fronts. Discuss about spherical wave fronts.
(b) What are the advantages of satellite communication systems over microwave communication systems?
5. (a) Explain the need of telecommunication networks.
(b) Distinguish between telecommunication network and optical communication network.
6. (a) Tabulate the differences between analog and digital cellular systems.
(b) Draw and explain the block diagram of telecommunication network.
7. (a) Give the algorithm for LRC method of error checking.
(b) Draw and explain the block diagram of voice band modem.
8. (a) Explain in detail about any one of the data transmission modes.
(b) Differentiate between character and bit oriented protocols.

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