Code.No: RR310503 | RR | SET-1

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
DATA COMMUNICATIONS
(COMMON TO CSE, IT, CSS)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks
- - -

1.a) Differentiate between the implementation of 8-QAM and 8-PSK transmitter blocks and their corresponding constellation diagrams.
b) With the help of necessary block diagrams and waveforms describe transmission and reception of BPSK signals. [8+8]

2.a) Explain a method to recovery of phase information of carrier signal in an M-ary PSK system.
b) Draw the block diagrams of transmitter and receiver for a differential binary phase shift keying (DBPSK) system. Explain the operation of the DBPSK system based on an assumed binary input sequence. [8+8]

3. Explain the operation of
a) Data modems
b) Intelligent modems. [8+8]

4. Write short notes on the following:
a) Error detection methods
b) Universal serial receiver transmitter. [8+8]

5.a) Draw the essential blocks of a codec chip and explain how line division multiplexing of pulse code modulated signals is done in a codec.
b) Describe bit interleaving and word interleaving procedures to achieve synchronization of TDM frames. [8+8]

6.a) Differentiate between concentrator and a multiplexer.
b) What is the necessity of line equalization in data communication systems?
c) Compare and contrast bus and ring topologies of a data communication network. [16]

7.a) List various fields in a HDLC frame and describe the structure of every field in the frame format.
b) Describe how data is transferred between 2 stations through HDLC frames over a half duplex link. [8+8]

8. Describe the line protocols to implement point-to-point and multi-point configurations over full duplex links. [16]

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Code.No: RR310503 | RR | SET-2

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
DATA COMMUNICATIONS
(COMMON TO CSE, IT, CSS)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks
- - -

1. Explain the operation of
   a) Data modems
   b) Intelligent modems. [8+8]

2. Write short notes on the following:
   a) Error detection methods
   b) Universal serial receiver transmitter. [8+8]

3.a) Draw the essential blocks of a codec chip and explain how line division multiplexing of pulse code modulated signals is done in a codec.
   b) Describe bit interleaving and word interleaving procedures to achieve synchronization of TDM frames. [8+8]

4.a) Differentiate between concentrator and a multiplexer.
   b) What is the necessity of line equalization in data communication systems?
   c) Compare and contrast bus and ring topologies of a data communication network. [16]

5.a) List various fields in a HDLC frame and describe the structure of every field in the frame format.
   b) Describe how data is transferred between 2 stations through HDLC frames over a half duplex link. [8+8]

6. Describe the line protocols to implement point-to-point and multi-point configurations over full duplex links. [16]

7.a) Differentiate between the implementation of 8-QAM and 8-PSK transmitter blocks and their corresponding constellation diagrams.
   b) With the help of necessary block diagrams and waveforms describe transmission and reception of BPSK signals. [8+8]

8.a) Explain a method to recovery of phase information of carrier signal in an M-ary PSK system.
   b) Draw the block diagrams of transmitter and receiver for a differential binary phase shift keying (DBPSK) system. Explain the operation of the DBPSK system based on an assumed binary input sequence. [8+8]

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Code.No: RR310503 | RR | SET-3

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
DATA COMMUNICATIONS
(COMMON TO CSE, IT, CSS)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks
- - -

1.a) Draw the essential blocks of a codec chip and explain how line division multiplexing of pulse code modulated signals is done in a codec.
b) Describe bit interleaving and word interleaving procedures to achieve synchronization of TDM frames. [8+8]

2.a) Differentiate between concentrator and a multiplexer.
b) What is the necessity of line equalization in data communication systems?
c) Compare and contrast bus and ring topologies of a data communication network. [16]

3.a) List various fields in a HDLC frame and describe the structure of every field in the frame format.
b) Describe how data is transferred between 2 stations through HDLC frames over a half duplex link. [8+8]

4. Describe the line protocols to implement point-to-point and multi-point configurations over full duplex links. [16]

5.a) Differentiate between the implementation of 8-QAM and 8-PSK transmitter blocks and their corresponding constellation diagrams.
b) With the help of necessary block diagrams and waveforms describe transmission and reception of BPSK signals. [8+8]

6.a) Explain a method to recovery of phase information of carrier signal in an M-ary PSK system.
b) Draw the block diagrams of transmitter and receiver for a differential binary phase shift keying (DBPSK) system. Explain the operation of the DBPSK system based on an assumed binary input sequence. [8+8]

7. Explain the operation of
a) Data modems
b) Intelligent modems. [8+8]

8. Write short notes on the following:
a) Error detection methods
b) Universal serial receiver transmitter. [8+8]

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Code.No: RR310503 | RR | SET-4

III B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
DATA COMMUNICATIONS
(COMMON TO CSE, IT, CSS)

Time: 3hours **Max.Marks:80**

Answer any FIVE questions
All questions carry equal marks
- - -

1.a) List various fields in a HDLC frame and describe the structure of every field in the frame format.
b) Describe how data is transferred between 2 stations through HDLC frames over a half duplex link. [8+8]

2. Describe the line protocols to implement point-to-point and multi-point configurations over full duplex links. [16]

3.a) Differentiate between the implementation of 8-QAM and 8-PSK transmitter blocks and their corresponding constellation diagrams.
b) With the help of necessary block diagrams and waveforms describe transmission and reception of BPSK signals. [8+8]

4.a) Explain a method to recovery of phase information of carrier signal in an M-ary PSK system.
b) Draw the block diagrams of transmitter and receiver for a differential binary phase shift keying (DBPSK) system. Explain the operation of the DBPSK system based on an assumed binary input sequence. [8+8]

5. Explain the operation of
a) Data modems
b) Intelligent modems. [8+8]

6. Write short notes on the following:
a) Error detection methods
b) Universal serial receiver transmitter. [8+8]

7.a) Draw the essential blocks of a codec chip and explain how line division multiplexing of pulse code modulated signals is done in a codec.
b) Describe bit interleaving and word interleaving procedures to achieve synchronization of TDM frames. [8+8]

8.a) Differentiate between concentrator and a multiplexer.
b) What is the necessity of line equalization in data communication systems?
c) Compare and contrast bus and ring topologies of a data communication network. [16]

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