Code.No: **A109211201** | R09 | SET-1

II B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
DATA COMMUNICATION SYSTEMS
(INFORMATION TECHNOLOGY)

Time: 3hours **Max.Marks:75**

Answer any FIVE questions
All questions carry equal marks

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1.a) Define protocol? Distinguish between connection oriented and connection less protocol.
b) Describe the following Network topologies
i) Bus ii) Star iii) Mesh [15]

2.a) Describe the characteristics of Parallel – Conductor transmission lines.
b) List out and describe the losses associated with optical fibers. [15]

3.a) Draw the block diagram and explain the operation of a single channel simply PCM transmission system.
b) Determine the line speed of T_1 Digital Carrier System. [15]

4.a) What is Spherical wave front? Explain.
b) Explain the operation of Micro wave radio link transmitter and receive with the help of a block diagram.
c) Give geosynchronous orbit requirements. [15]

5.a) Explain the operation of cordless telephone system.
b) How do you classify transmission Parameters? Explain each parameter. [15]

6.a) Describe the concepts of Personal Communication System.
b) Explain the operation of N – AMPS cellular telephone systems. [15]

7. Discuss the features of LRC, VRC, checksum and CRC Error detection techniques. [15]

8. Write a note on
i) Asynchronous voice band Modems
ii) High Level Data link control. [15]

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Code.No: **A109211201** | R09 | SET-2

II B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
DATA COMMUNICATION SYSTEMS
(INFORMATION TECHNOLOGY)

Time: 3hours **Max.Marks:75**

Answer any FIVE questions
All questions carry equal marks

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1. Explain the following terms
   i) Protocol
   ii) Peer to Peer data communication
   iii) Serial and Parallel data transmission
   iv) Encapsulation and decapsulation [15]

2.a) Compare balanced and unbalanced transmission lines.
   b) Compare three types of optical fiber configurations. [15]

3.a) Derive the expression for signal to quantization Noise ratio of a PCM System.
   b) What is Companding? Compare A – law and μ - law Companding. [15]

4.a) Discuss Optical properties of radio waves.
   b) Explain Satellite orbits and orbital patterns. [15]

5.a) Explain the caller ID Service. Give its ringing cycle and frame format.
   b) Describe and compare TWO Wire and four Wire Voice frequency circuits. [15]

6.a) Discuss the frequency allocation for AMPS.
   b) Describe AMPS Control channels. [15]

7.a) Compare the features of various data communication character codes.
   b) Explain the term character synchronization. [15]

8. Write a note on
   i) Voice band data Communication Modems.
   ii) Asynchronous data link protocols. [15]

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Code.No: **A109211201** | R09 | SET-3

II B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
DATA COMMUNICATION SYSTEMS
(INFORMATION TECHNOLOGY)

Time: 3hours **Max.Marks:75**

Answer any FIVE questions
All questions carry equal marks
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1.a) Describe OSI seven layer protocol architecture in detail.
b) Explain Network components, functions and features. [15]

2. Explain the characteristics and compare various types of Metallic transmission lines. [15]

3.a) Explain the following terms with reference to PCM system.
i) Sampling ii) Quantization
b) Compare synchronous and statistical time division multiplexing. [15]

4.a) What is Skip distance? Explain.
b) List out the advantages of Microwave radio communication.
c) What is free Space Path loss? [15]

5.a) Describe Telephone call procedures.
b) What is the purpose of local subscriber loop? List out and explain its main component parts. [15]

6. Describe the features of IS – 54 and IS – 136 and compare them. [15]

7.a) Explain the terms retransmission and forward error correction.
b) Describe error correction procedure in Hamming codes. [15]

8. Write a note on
i) Synchronous Voice band Modems
ii) Binary Synchronous Communication (BSC) protocol. [15]

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Code.No: **A109211201** | R09 | SET-4

II B.TECH – I SEM EXAMINATIONS, NOVEMBER - 2010
DATA COMMUNICATION SYSTEMS
(INFORMATION TECHNOLOGY)

Time: 3hours **Max.Marks:75**

Answer any FIVE questions
All questions carry equal marks

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1.a) List out various standard organization of Data Communication.
b) What are the advantages of layered architecture?
c) What is encapsulation and decapsulation? [15]

2.a) Give the equivalent circuit of a two wire parallel transmission line.
b) What are the losses of Metallic transmission lines?
c) List out the advantages and disadvantages of optical fiber cables. [15]

3.a) Explain and compare delta modulation and differential PCM.
b) Describe the features and compare various line coding formats. [15]

4.a) Explain the following terms
i) Electromagnetic Polarization
ii) Wave attenuation and absorption.
b) Compare three modes of propagating electromagnetic waves. [15]

5.a) Explain the operation of a telephone set with the help of functional blocks diagram.
b) What are the common units for signal and noise power measurements in the telephone industry? [15]

6.a) Explain GSM Services and GSM system architecture.
b) What are the advantages of personal communication satellite system? [15]

7. Explain the specification and formats of various types of bar codes. [15]

8. Write a note on
i) Voice Band Modem Specification
ii) Synchronous data link protocols. [15]

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