Code No: RR321702 **Set No. 1**

**III B.Tech II Semester Supplementary Examinations, Nov/Dec 2005**
**DATA AND COMPUTER COMMUNICATIONS**
**(Electronics & Telematics)**

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

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) Draw and Explain the Guided transmission configuration for point to point and multi point.
   (b) What are data encoding methods. Explain one. [10+6]
2. (a) Explain the encoding and modulation techniques.
   (b) Define the three fundamental frequency-domain parameters. [10+6]
3. Write short notes on:
   (a) Characteristics of TCP
   (b) Comparison between synchronous TDM and statistical TDM. [8+8]
4. Describe the frame format of SONET / SDH. [16]
5. What are the drawbacks of using Circuit Switching network for data transmission? How packet switching address these drawbacks? [16]
6. (a) What are the advantages of medium access control (MAC) protocol in LANs.
   (b) Distinguish between the ring and bus topologies. [8+8]
7. (a) Explain the functional architecture of B-ISDN with a block diagram.
   (b) What are the transmission services provided for B-ISDN subscribers? [10+6]
8. (a) Distinguish different communication switching techniques.
   (b) What are the characteristics of a routing function. [10+6]

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Code No: RR321702 **Set No. 2**

**III B.Tech II Semester Supplementary Examinations, Nov/Dec 2005**
**DATA AND COMPUTER COMMUNICATIONS**
**(Electronics & Telematics)**

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

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) Draw Simplified Communication model and explain in detail.
   (b) Write Short notes on transmission media. [6+10]
2. (a) Explain the encoding and modulation techniques.
   (b) Define the three fundamental frequency-domain parameters. [10+6]
3. (a) Data link protocol almost always puts the CRC in a Trailer rather than in a Header. Why? Explain with an example.
   (b) What is the remainder obtained by dividing $x^7 + x^5 + 1$ by the generator polynomial $x^3 + 1$ ? [10+6]
4. (a) Why is that the Start and Stop bits can be eliminated when character interleaving is used on Synchronous TDM?
   (b) Explain in terms of DLC and Physical layer concepts, how error and flow control are accomplished in Synchronous TDM. [8+8]
5. (a) Draw a simple packet switching network and explain how packets are transmitted from one station to another station?
   (b) How to approach the problem of transmitting data through a packet switching network when the data length is greater than maximum packet size? Discuss in detail about the various options available. [8+8]
6. (a) Distinguish between the active tap and passive tap categories of optical fibre taps followed in bus LANs.
   (b) What is meant by timing jitter in ring LANs? [10+6]
7. Explain the following end-to-end communication provided by ISDN
   (a) Circuit-switched calls
   (b) packet-switched calls [8+8]
8. (a) What are the characteristics of switching networks?
   (b) Explain the functioning of the space division circuit-switching. [6+10]

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Code No: RR321702 **Set No. 3**

**III B.Tech II Semester Supplementary Examinations, Nov/Dec 2005**
**DATA AND COMPUTER COMMUNICATIONS**
**(Electronics & Telematics)**

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

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) Explain with sketch and example the theoretical efficiency and compare with actual transmission efficiency.
   (b) Compare the shielded and unshielded twisted pair in terms of attenuation and Near end cross talk.
   (c) Explain the infra-red communication. [6+5+5]
2. (a) Explain with example the direct sequence spread spectrum system.
   (b) What is balanced and unbalanced transmission. [10+6]
3. Write short notes on:
   (a) Characteristics of TCP
   (b) Comparison between synchronous TDM and statistical TDM. [8+8]
4. Describe the frame format of SONET / SDH. [16]
5. (a) Explain with a neat block diagram how TDM bus switching can be implemented?
   (b) What are the main requirements that will affect the routing strategy. How a reasonable level of service can be maintained with minimum compromise on these perquisites? [8+8]
6. (a) What are the services provided by logical link control (LLC)?
   (b) Distinguish between the Baseband and Broadband coaxial cable transmission techniques in LANs. [6+10]
7. (a) Distinguish between N-ISDN and B-ISDN.
   (b) What are the various B-ISDN access methods and compare them?
   (c) What are the various functions of ISDN physical layer? [6+5+5]
8. (a) Briefly explain the congestion avoidanace method with explicit signaling.
   (b) Explain the steps involved in congestion recovery with implicit signaling. [8+8]

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Code No: RR321702 **Set No. 4**

**III B.Tech II Semester Supplementary Examinations, Nov/Dec 2005**
**DATA AND COMPUTER COMMUNICATIONS**
**(Electronics & Telematics)**

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

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) Explain with sketch and example the theoretical efficiency and compare with actual transmission efficiency.
   (b) Compare the shielded and unshielded twisted pair in terms of attenuation and Near end cross talk.
   (c) Explain the infra-red communication. [6+5+5]
2. (a) Describe the frame transmissions with suitable model.
   (b) Discuss stop-and-wait link utilization. [8+8]
3. (a) Explain the frame format of HDLC.
   (b) Describe the characteristics of HDLC. [8+8]
4. Describe the frame format of SONET / SDH. [16]
5. Highlight the distinction between the packet switching signalling function and the Circuit switching information transfer function. [16]
6. (a) Explain LAN protocol architecture.
   (b) Find the correspondence of the LAN architecture with the OSI model [8+8]
7. (a) Distinguish between interactive and distributive services of B-ISDN.
   (b) Discuss briefly the evolution of ISDN. [10+6]
8. (a) What are the advantages of packet-switching over circuit-switching.
   (b) Explain the adaptive routing strategy followed packet switching. [8+8]

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