Code No: 07A51701   **R07**   **Set No. 2**

III B.Tech I Semester Examinations,November 2010
BASICS OF TELEMATICS
Electronics And Telematics

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. What is a transmission bridge? Explain in detail about stone transmission bridge and Hayes transmission bridge with neat sketches. [16]

2. Explain in detail about frequency division multiplexing. [16]

3. (a) Discuss the buffered fabrics and compare transmission cost and buffer cost?

   (b) Explain the schematic of a generic switch with a neat diagram? [8+8]

4. (a) Derive an expression for the normalized throughput of roll-call polling if a station has a packet to send with a probability 'p', the number of stations 'N', the mean round-trip delay in accessing a station is 'R', the medium, bandwidth 'b', a poll/reply length of 'l' bytes and message length of 'L' bytes.

   (b) Compute peak achievable through put for p=0.012, N=1050, R=0.1s, b=10Mbps, L=500bytes, l=10bytes. [10+6]

5. Write notes on:

   (a) PNNI routing

   (b) Router discovery in routing with in a broad cast LAN. [8+8]

6. (a) Explain the five general interface management lines in IEEE 488?

   (b) Discuss about the functional specifications of IEEE 488? [8+8]

7. Explain the following circuits in a stronger exchange:

   (a) Guarding & preparing circuit.

   (b) Impulsing circuit. [8+8]

8. (a) What is IP and what are the components in IP address?

   (b) Let the sampling frequency of digitized voice is 8000 and sample size is 1byte, how long will it take to fill 500byte packet? For interactive voice communication delay of 100ms is considered as limit. What is the fraction of 100ms is spent on packetization? [8+8]

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Code No: 07A51701 | **R07** | **Set No. 4**

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Electronics And Telematics

Time: 3 hours 　　　　　　　　　　　　　　　　　　　Max Marks: 80
Answer any FIVE Questions
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⋆ ⋆ ⋆ ⋆ ⋆

1. (a) What are the factors effecting "integrated service in ATM"
   (b) Distinguish the terms:
      i. Virtual Circuit Identifier (VCI)
      ii. Permanent Virtual Circuit (PVC)
      iii. Flow identifier.　　　　　　　　　　　　　　　　[8+8]

2. (a) Explain the terms routing, routing table and routing protocol.
   (b) Write the requirements of routing protocols.
   (c) What are the available choices for routing protocols to the designers?[6+6+4]

3. (a) Explain switch fabrics in packet switching?
   (b) Write notes on message switching?　　　　　　　　　　[8+8]

4. (a) What are the different types of AC signaling used in junction & trunk lines? Explain them.
   (b) Explain how the VF repeater is used to amplify the attenuated speech current?
   　　　　　　　　　　　　　　　　　　　　　　　　[8+8]

5. Discuss about supervisory and metering circuits in an auto exchange.　　　[16]

6. (a) Explain clearly why the physical aspects of interfacing is to be standardized?
   (b) Compare X.20, X.21, X.25 CCITT interface standards.
   (c) What is PAD? Where it is used?　　　　　　　　　　　[6+6+4]

7. (a) What is multiple - access? In which context multiple access is required?
   (b) Write about carrier sense multiple access (CSMA).　　　　[8+8]

8. (a) What are the principle functions of a modem? List the modem standards developed by CCITT in the V-series recommendations.
   (b) Discuss the standard interface between the modem and the data processing equipment.
   (c) Compare WDM & CDM.　　　　　　　　　　　　　[6+6+4]

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Code No: 07A51701　　　　　　$\boxed{\textbf{R07}}$　　　　$\boxed{\textbf{Set No. 1}}$

III B.Tech I Semester Examinations,November 2010
BASICS OF TELEMATICS
Electronics And Telematics

Time: 3 hours　　　　　　　　　　　　　　　　　　　　　Max Marks: 80

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

1. (a) Write about SSB transmission.
   (b) Explain about QAM.　　　　　　　　　　　　　　　　　　　[8+8]

2. (a) Compare & contrast FH/CDMA & DS/CDMA?
   (b) Mention the advantages of frequency hopping?　　　　　　[10+6]

3. (a) What are the differences between a telephone network and internet?
   (b) What is link delay? Explain its significance in telephone networks.
   (c) Explain the significance of backbone switch in telephone network.　[4+6+6]

4. Explain about RS-485 and RS-499 interface standards.　　　　　　　[16]

5. Write notes on:
   (a) X.21 interface
   (b) Multicasting.　　　　　　　　　　　　　　　　　　　　　[8+8]

6. (a) Write notes on subscriber line termination.
   (b) Describe the working of HAYE's transmission bridge.　　　　[8+8]

7. (a) What are the advantages of automatic telephone exchange over manual exchange?
   (b) Distinguish between trunk networks and local distribution facilities. Draw the schematics of an intercity, network?　　　　　　　　　　　[8+8]

8. Write notes on:
   (a) Multicasting
   (b) Banyan networks.　　　　　　　　　　　　　　　　　　　[8+8]

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Code No: 07A51701 | **R07** | **Set No. 3**

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BASICS OF TELEMATICS
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Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
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1. (a) What are the components used in automatic telephone system? Explain briefly about them.

   (b) Briefly explain about the tones in telephone system.   [8+8]

2. Explain in detail about RS-232-C interface standards.   [16]

3. Describe the series and shunt methods of joining magnet and other types of bell in a sub-station and show how the telephone lines are terminated in a sub-station.
                                                                               [16]

4. (a) What is FDD and What are its advantages?

   (b) Explain in detail about TDD/FDMA scheme?   [8+8]

5. (a) Compare popular CCITT and AT&T modem standards.

   (b) Explain the principle of operation of bit and character-inter leaved TDM?
                                                                               [8+8]

6. Write notes on:

   (a) Inverse Multiplexing

   (b) Add-drop Multiplexing.   [8+8]

7. Explain Dijkstra algorithm while computing shortest path. Use the same to find the shortest path (A to F) as shown in figure 1   [16]
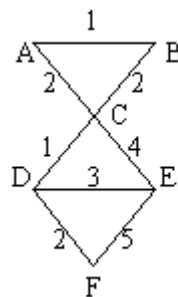

Figure 1:

8. (a) "Statistical multiplexing gain is central to the design of ATM" - explain the above, statement?

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(b) Assuming a service rate of 64kbps and that voice calls can tolerate a round trip delay of 100ms. How many kms can a cell span without using echo cancellers for 32 & 64 byte cells. [8+8]

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FIRSTRANKER

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