

**III B.Tech I Semester Supplementary Examinations, November 2006**  
**BASICS OF TELEMATICS**  
**(Electronics & Telematics)**

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

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

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1. (a) What is multiplexing? What are its advantages and disadvantages?  
(b) Compare the advantages and disadvantages of TDM; FDM; CDM and WDM. [6+10]
2. (a) Discuss the following interface standards.
  - i. X.3
  - ii. X.28
  - iii. X.29(b) Explain the principle of signalling on junction lines and trunk lines with necessary diagrams. [8+8]
3. (a) Draw a private automatic branch exchange and explain its functions. List the advantages of digital P B X.  
(b) Draw a call metering circuit diagram and explain how the calls are metered and registered. [8+8]
4. (a) Explain the basic principle of stored program control switching system and its use in electronic exchanges.  
(b) Discussing the advantages of submarine cable signaling and the transmission of signals in them. [8+8]
5. (a) Distinguish between TD switching and space switching. Draw a schematic for a TD switching unit capable of handling 800 telephone extensions.  
(b) What are transmission bridges? What are their functions? Explain with neat diagram Stone's and Haye's bridges. [8+8]
6. (a) Define a packet and packet switching. Explain the different form of routing used in public-packed-switched networks. What are the advantages of packet-switching.  
(b) Explain the concept of internet, its advantages and applications. [8+8]
7. (a) What is the need of routing in a telephone network. Discuss briefly the various routing techniques.  
(b) A TDMA system operates at 100 mbps with 2 msec. frame time. Assume all slots of equal length and a guard time of  $1\mu\text{sec}$  is required between slots. [8+8]
  - i. Compute the efficiency of Communication service for the case of 1,2,5,10,20,50 and 100 slots per frame.

ii. Graph the above results.

8. Write notes on:

(a) Generic Switch

(b) RS 449

(c) Synchronizers and regenerators.

[5+5+6]

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