

**SIXTH SEMESTER EXAMINATION-2006**  
**COMPUTER NETWORK**

Full Marks-70

Time : 3 Hours

*Answer question No. 1 which is compulsory and any five questions from the remaining questions.*

*The figures in the right hand margin indicate full marks for the questions.*

1. Answer the following questions : [2 X10]
- (i) What are the three modes of transmission ?
  - (ii) Differentiate between bit-rate and baud rate.
  - (iii) List three main function of data link layer.
  - (iv) Distinguish between a damaged frame and lost frame.
  - (v) In a Stop-and-Wait ARQ what happens if a NAK is lost in the transit.
  - (vi) Explain the meaning of bit-stuffing.
  - (vii) Explain the basic principles of virtual circuit packet switching.
  - (viii) What is an I-frame in HDLC protocol.
  - (ix) Give two examples of analog information.
  - (x) How a VPI differs from, VCI in ATM.
2. (a) Consider the three-way handshake in TCP connection setup. Suppose that an old SYN segment from station A arrives at station B, requesting a TCP connection. Explain how the three-way handshake procedure ensures that the connection is rejected. [5]
- (b) Discuss the following :
- (i) Flow control
  - (ii) Network Security
3. (a) Explain how Amplitude Modulation is done. Mention

- its limitations. [5]
- (b) Distinguish between Manchester Encoding and Differential Manchester Encoding. [5]
4. (a) Find the data stream of the waveform given below encoded in HDB3 encoding scheme. [5]
- (b) Differentiate between TDM and FDM. [5]
5. (a) Explain why error occurs in a Computer network. Explain the general principle of Error detection. Briefly describe the method of Cyclic-redundancy check (CRC) for error checking. [6]
- (b) What is understood by Go-Back-N-ARQ? Draw the sender and receiver windows for the system using Go-Bac-N ARQ given the frames 4, 5, 6 and 7 are sent : frames 4 through 7 are acknowledged. [4]
6. (a) Give a comparison between secret key and public key cryptographic system. [5]
- (b) Differentiate between IPv4 and IPv6. [5]
7. (a) What is Guided media? Give examples of Guided media. Describe the principles of data transmission in Guided media and unguided media. [5]
- (b) Explain the following with examples 2.5X2
- (i) Circuit switching
- (ii) Wavelength division multiplexing.
8. (a) Explain the following in brief (any four) 2.5X4
- (i) CSMA /CD protocol
- (ii) Frame Relay
- (iii) QoS (Quality of service)
- (iv) SMTP
- (v) Ethernet LAN
- (vi) HDLC.