JU – 1022

V Semester B.E. (CSE/ISE) Degree Examination, Jan./Feb. 2014
(2K11 Scheme)
CI 53 : COMPUTER NETWORKS – I

Time : 3 Hours Max. Marks : 100

Instruction : *Answer **any five** questions selecting at least **two** from each Part.*

PART – A

1. a) Explain the OSI Reference Model and bring out the reasons for failure of OSI. **10**

   b) Define Nyquist rate and Shannon's channel capacity theorem. Find the maximum bit rate if W = 2 MHz, SNR = 20 dB. **5**

   c) What is a peer-to-peer process ? **5**

2. a) Discuss various types of Modulation Techniques for converting digital data to analog signal. How QAM is efficient compared to others ? **8**

   b) Explain pube code modulation technique with neat block diagram. **6**

   c) What are the characteristics of guided transmission media ? Explain coaxial cable with neat diagram. **6**

3. a) Explain Hamming code for error detection and correction with an example. **6**

   b) Explain Line Encoding Method. Encode the following data stream 10011000 11001110 using Machester, differential Manchester. **8**

   NRZ - I, NRZ -L, Bipolar Technique.

   c) Explain Microwave communication. **6**

4. a) Discuss CSMA/CD protocol w.r. to IEEE 802.3. Explain binary exponential back off algorithm. **10**

   b) With HDLC Frame Format. Explain working of HDLC protocol. **10**

P.T.O.

PART – B

5. a) What is Ethernet ? Explain Standard Ethernet Frame with Frame Format. **8**

   b) What is the difference between Unicast, Broadcast and Multicast address. **6**

   c) With neat diagram explain working of token ring. **6**

6. a) Explain Bluetooth architecture. Draw frame format of Bluetooth (802.15). **10**

   b) With frame format of 802.11 (WLAN). Explain how frames are exchanged between two system in WLAN. **10**

7. a) Discuss the following : Repeater, Bridger, Router, Gateways. **10**

   b) Bring out difference between 2G, 3G. Explain steps involved when mobile call is made to another mobile station. **10**

8. Write short notes on :

   i) difference between JCP/IP and OSI Reference model.

   ii) Fast Ehternet, Gigabit Ehternet.

   iii) Transmission impairments.

   iv) Multiplexing. **(5×4=20)**
