



V Semester B.E. (CSE/ISE) Degree Examination, December 2016

(2K11 Scheme)

CI – 53 : COMPUTER NETWORKS – I

Time : 3 Hours

Max. Marks : 100

Instructions: Answer **any five** questions choosing atleast **any two** questions from **each** Part.

PART – A

1. a) What is protocol stack ? Justify the need of layered architecture. 6
b) Bring out differences between OSI and TCP/IP architecture. 7
c) Explain the different impairments with examples. 7
2. a) What is modulation ? Draw the waveform of ASK, PSK and FSK for an input 10110101. Calculate the bit rate, given that baud rate = 2000 baud and use 16 QSM. 8
b) Explain the various modulation techniques to convert analog data to analog signal. 6
c) What are the objectives of encoding techniques ? Encode the following 1001100011001110 using Manchester, differential Manchester and NRZ encoding method. 6
3. a) What is data encoding ? Encode the data 01001100011 into digital signal using NRZ, Manchester and differential Manchester, Bipolar. 6
b) Describe the frame format of HDLC and PPP standard protocol. 6
c) What is multiplexing ? Explain FDM, TDM and WDM with example. 8
4. a) Show that the channel efficiency in slotted Aloha is twice that in pure Aloha. 8
b) Explain the simplex stop and wait protocol. What are the advantages ? 5
c) How is hamming code used to detect and correct errors ? Distinguish between bit and burst error and explain method to detect them. 7



PART – B

5. a) With a frame format of 802.3, explain how frames are sent from same to destination. Explain its performance. **10**
- b) Distinguish P-persistent and non-persistent CSMA protocols. Explain the different scheduling approaches to access transmission medium. **10**
6. a) Explain bluetooth architecture with frame format and protocol stack. **10**
- b) With the frame format of 802.11 (WLAN), explain the steps involved in data communication in wireless network. **10**
7. a) Explain working of CSMA/CA. Why CSMA/CA cannot be used in a wireless network ? **8**
- b) Explain the steps involved in making mobile call from one module to another mobile station. **6**
- c) Bring out the differences between 2G and 3G. **6**
8. Write short notes on : **(5×4=20)**
- 1) Bus topology, star topology
 - 2) Bridges, repeater
 - 3) Spread spectrum
 - 4) Multiplexing.
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