UJ – 165

V Semester B.E. (CSE/ISE) Degree Examination, June/July 2017
(2K11 Scheme)
CI 53 : COMPUTER NETWORKS – I

Time : 3 Hours Max. Marks : 100

***Instruction** : Answer **five full** questions, choosing atleast **two** from **each** Part.*

PART – A

1. a) Differentiate between OSI and TCP/IP reference model. **6**

   b) With a neat diagram, explain OSI reference model. **9**

   c) Discuss need of layered architecture. **5**

2. a) Describe how data could be transmitted using a combination of modulation techniques. **10**

   b) Differentiate between frequency division multiplexing and time division multiplexing with relevant diagrams. **10**

3. a) How many parity check bits must be included with the data word to achieve single error correction and double error detection when the data word contains

      i) 16 bits

      ii) 32 bits

      iii) 64 bits **10**

   b) Discuss the design issues of block coding and linear block coding techniques. **10**

4. a) A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps. What is the throughput if system produces :

      i) 1000 frames per second

      ii) 500 frames per second **6**

   b) What are sliding window protocols ? Explain Go-Back-N protocol for noisy channel. **10**

   c) Explain CSMA/CD technique with necessary diagram. **4**

P.T.O.

PART – B

5. a) Compare the data rates for standard ethernet, fast ethernet, giga bit ethernet and ten gigabit ethernet. **10**

   b) Explain the following with respect to FAST ethernet :

      i) Implementation

      ii) 100 BASE-TX

      iii) Encoding

      iv) 100 BASE-FX. **10**

6. a) Explain bus backbone and star backbone networks. **6**

   b) What is VLAN ? Explain briefly. **4**

   c) Explain what is loop problem and solution for a loop problem in a bridge with suitable examples and diagrams. **10**

7. a) Explain 2G, 3G, 4G and 5G telecommunication standards. **6**

   b) Differentiate between WDM and DWDM. **8**

   c) Discuss the design issues of cross bar switch. **6**

8. a) With suitable diagram explain distance vector routing. **6**

   b) What is tunneling in case of multicast routing ? Explain multicast backbone of routers using concept of tunneling. **8**

   c) Explain the MAC frame format of IEEE 802.3. **6**
