IT 5 – 1 (RC)

T.E. (I.T.) Semester – V (RC) Examination, May/June 2015
INTRODUCTION TO DATA COMMUNICATION

Duration : 3 Hours   Total Marks : 100

Instructions : *Attempt **any five** questions by taking atleast **one** question*
*from **each** module (to provide Graph papers along with this*
Q-Paper)

Module – 1

1. a) List the explain minimum six key tasks that must be performed in a data
      communications system.   6

   b) Why there is a need for standardization of protocol architecture ? Who will be
      benefited from this ?   6

   c) Briefly discuss functions of five layers of TCP/IP protocol suite. 8

2. a) Explain advantages/disadvantages of optical fiber medium of transmission
      with its applications.   6

   b) Describe the three types of propagation's used in unguided signals to travel
      with their range.   6

   c) Explain Frequency-Reuse principle, Transmitting, Receiving and Hand-off in
      Cellular telephony.   8

Module – 2

3. a) Describe NRZ-L, NRZ-I and RZ polar encoding schemes.   6

   b) Show that efficient use of bandwidth can be achieved by use of QPSK over
      BPSK.   6

   c) Describe Delta Modulation (DM) with an example.   8

4. a) State and explain four important characteristics an interface between DTE
      and DCE must have to meet the standards being developed.   8

   b) Describe Asynchronous and Synchronous transmission with a neat diagram
      and specify which one is suitable for High speed communication.   7

   c) Explain the concept of Spread Spectrum.   5

P.T.O.

Module – 3

5. a) Depict with sequences of snapshots of the transmission process over time for a < 1, a > 1 in stop and wait flow control link utilization. (Transmission time = 1; Propagation time = a). **8**

   b) Describe CRC generator and checker in detail. **6**

   c) Show how error control can be achieved with Go-Back-N ARQ ? And give its utilization. **6**

6. a) Give the characteristics of Asynchronous Protocols and Synchronous Protocols. **6**

   b) Describe in Binary Synchronous Communication (BSC), control frame and data frame. **8**

   c) Explain principles of packet switching, circuit switching and message switching. **6**

Module – 4

7. a) Which are the four alternative media that can be used for while choosing a bus LAN Topology ? **8**

   b) Which are the three services provided as alternatives for attached devices using LLC ? **6**

   c) State the Functions of a bridge. **6**

8. a) Discuss examples of requirements that call for higher speed LANs. **6**

   b) List the ambitious requirements that Fiber Channel must satisfy as per the Fiber Channel Industry Association. **8**

   c) Describe in brief the Blue-tooth architecture. **6**

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