2315116.

IT 5 – 1 (RC)

T.E. (I.T.) (Semester – V) Examination, May/June 2016
INTRODUCTION TO DATA COMMUNICATION (RC)

Duration : 3 Hours | Total Marks : 100

Instructions : *1) Answer **any 5** questions, taking atleast **one** from **each** Module.*
2) Assume any suitable data if necessary.

MODULE – 1

1. a) List the factors that affect the performance, reliability and security of a network. **7**
   b) What is a topology ? Explain Star and Mesh topology. List their advantages and disadvantages. **7**
   c) What is the difference between service point address, a logical address and a physical address ? **3**
   d) What are the advantages of shielded twisted pair over unshielded twisted pair ? **3**

2. a) Discuss the modes of propagating light along optical channels. **6**
   b) A line has a signal to noise ratio of 1000 and a bandwidth of 4000 KHz. What is the maximum data rate supported by this line ? **4**
   c) List the functions of the Data Link Layer. **5**
   d) List and explain any 3 methods used to propagate radio waves. **5**

MODULE – 2

3. a) List the steps that take an analog signal to a PCM digital code. **7**
   b) Explain the asymmetry of 56K modem. **6**
   c) Explain the procedural specification of RS-232 with an example. **7**

4. a) Explain the pin connections of a null modem. **6**
   b) Draw a neat diagram of the ISDN physical interface and explain its electrical specifications. **6**
   c) Briefly explain the working of CDMA with an example. **8**

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MODULE – 3

5. a) How are synchronous protocols classified ? Explain the process of multi-block and multi-frame transmission. 7

   b) Differentiate between polling and selecting. 5

   c) Name and explain any 6 categories of U - frames. 6

   d) What is blocking ? 2

6. a) Explain the two types of switches used in circuit switching. 5

   b) With reference to selective reject ARQ discuss the following : 6

      i) Damaged Frame ii) Lost acknowledgement

   c) The code 11110101101 was received. Using the Hamming encoding algorithm, what was the original code sent ? 5

   d) Describe the format of BSC data frame. 4

MODULE – 4

7. Write short notes on : (4×5=20)

   i) Application of wireless LANs

   ii) Spanning tree approach

   iii) Networking and internetworking devices

   iv) Fiber channel.

8. a) Explain the Type1, 2 and 3 operation in LLC protocol. 7

   b) Differentiate between adaptive and non-adaptive routing. 4

   c) Explain the functions of MAC protocol. 5

   d) List the key requirements of wireless LANs. 4