

Roll No. 

Total No. of Pages :02

Total No. of Questions : 09

**B.Tech.(EE)(2011 Onwards E-II)**  
**B.Tech.(Electrical& Electronics) (2011&2012 Batch E-II)**  
**(Sem.-7,8)**

**NETWORKS AND DATA COMMUNICATION**

Subject Code : BTEE-804E

M.Code : 71940

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

**SECTION-A**

**1. Answerbriefly :**

- a. What is network topology?
- b. What do you mean by Shannon capacity?
- c. Give the difference between shielded and unshielded twisted pair.
- d. Differentiate bit rate and baud rate. Give the relation between them.
- e. In CRC, if the data unit is 111111, the divisor is 1010, what is the dividend at transmitter?
- f. State the issues of data link layer.
- g. What is digital subscriber line?
- h. What do you mean by FHSS?
- i. Discuss the concept of redundancy in error detection.
- j. Compare datagram and virtual circuits.

**SECTION-B**

2. Explain transmission impairments in detail.
3. What is circuit switched networks? How communication is established in these networks?
4. What is CRC error detection scheme? Explain how such a scheme is most efficient for the action of burst errors.
5. Using Differential Manchester encoding scheme, encode the bit sequence 0101101001.
6.
  - a. Why frequency is divided in communication channels? Suppose there are three signal sources, each having bandwidth 300MHz. Find the minimum bandwidth of the path if 10MHz guard band are used.
  - b. Explain the concept of WDM with neat diagram. Also give its applications.

**SECTION - C**

7. What is ISO-OSI reference model? Compare it with TCP/IP reference model. Why TCP/IP reference model is more popular than OSI model?
8. Describe in detail about the physical description, applications of the following:
  - a. Co-axial cable
  - b. Fibre optics
  - c. Twisted pair cable
  - d. Broadcast Radio
9. Write short notes on any two:
  - a. FHSS
  - b. IP protocol architecture
  - c. FDM

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**