

**24442**

**B.Tech 7th Semester (Electronics &  
Communication Engg.) III**

**Examination – December, 2013**

**DATA COMMUNICATION**

**'F' Scheme**

**Paper : ECE-407-F**

**Time : Three hours ]**

**[ Maximum Marks : 100**

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

**Note :** Q. No. 1 is *compulsory*. Attempt *one* question from each Section.

1. (a) What are various components of data communication. 5 × 4
- (b) Discuss World Wide Web.
- (c) Discuss token passing ring.
- (d) What is modem synchronization.

## SECTION - A

2. (a) What is the differences between PSK and QAM? 10  
(b) Explain the probability of error and bit error rate. 10
3. (a) Determine the bandwidth efficiency for the following modulators. 15  
(a) QPSK,  $f_b = 10$  mbps.  
(b) 8 - PSK,  $f_b = 21$  mbps.  
(c) 16 - QAM,  $f_b = 20$  mbps.
- (b) What is clock recovery ckt. 5

## SECTION - B

4. (a) What are various codes in data communication. 10  
(b) Give various standard organization for data communication. 10
5. (a) Explain serial interface Rs. - 232. 15  
(b) What is private - line services. 5

## SECTION – C

6. (a) Discuss Ethernet. 10
- (b) Discuss asynchronous protocols. 10
7. Explain OSI model for data communication. 20

## SECTION – D

8. (a) Explain CCIT time division multiplexed carrier system. 10
- (b) Discuss CODECS. 10
9. (a) Give short note on security on the internet. 10
- (b) Discuss TCP/IP reference model. 10