

Roll No. ....

22664

M. Tech. 1st Semester (ECE)  
CBCS Scheme  
Examination – February, 2022

DATA COMMUNICATION NETWORKS

Paper : MTECE21C5

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

1. (a) Differentiate between Bit Rate and Baud Rate. 4
- (b) Explain with example the CRC Technique. 4
- (c) Describe the error control mechanism in detail. 4
- (d) What do you mean by message switching technique. 4
- (e) What is data encapsulation technique. 2
- (f) Write a short note on peer to peer process. 2

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### UNIT - I

2. (a) Explain Nyquist bit rate and Shannon Capacity in detail. 10  
(b) Write a short note on various types of guided media. 10
3. (a) Differentiate between Asynchronous and Synchronous Transmission. 10  
(b) Explain in detail with block diagram RJ-45 Male and Female connectors 10

### UNIT - II

4. Draw the frame diagrams of Binary Synchronous Communication Protocol and High-Level Data Link Control Protocol. 20
5. (a) Explain in detail AT&T Analog Hierarchy. 10  
(b) What do you mean by Interleaving. How it is different from Bit Padding in TDM. 10

### UNIT - III

6. (a) Explain Time slot interchange with Random access Memory locations. 10  
(b) Describe the functioning of Time Space Time switch. 10
7. (a) Explain in detail CSMA/CD and CSMA/CA with its applications. 10  
(b) Write a short note on DQDB and FDDI. 10

### UNIT - IV

8. (a) Explain with Architecture and Protocol Functions of OSI Model Layers. 10  
(b) Describe the TELNET, FTP, ICMP, RARP and SMTP of TCI/IP Model. 10
9. Write a detail working of ISDN with its two services and architecture. 20