

Unit-IV

8. (a) Differentiate between circuit switching and packet switching with their advantages and disadvantages.
- (b) What is Routing ? Differentiate between adaptive and non-adaptive routing algorithms.
9. (a) Compare IPv4 header with IPv6 header.
- (b) What is FTP ? How are the files transferred using FTP ?

Roll No. :

Total No. of Questions : 9] [Total No. of Pages : 4

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**M.C.A. (Regular) 3rd Semester (NON CBCS)
Examination, March-2021**

**DATA COMMUNICATION AND COMPUTER
NETWORK**

Paper-MCA-304

Time : Three Hours]

[Maximum Marks : 80

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 :- Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is compulsory. All questions carry equal marks.

1. Compulsory Questions :

- (a) How is bandwidth of a signal related to its spectrum ?
- (b) What is the purpose of framing bit ?

- (c) What is Protocol ? Name its various components.
- (d) Discuss the use of handshaking signal in asynchronous data transfer.
- (e) What is the need of multiple-access protocol ?
- (f) Define Piggybacking. What is its usefulness ?
- (g) What is IP spoofing ?
- (h) What is congestion control ? What are its categories ?

Unit-I

2. (a) Define Digital-to-Analog conversion. Discuss various techniques for digital-to-analog conversion.
- (b) Compare multilevel, multiple-slot and pulse-stuffed TDMs.
3. (a) What are the differences between serial and parallel transmissions ? Discuss *three* types of serial mode transmission.

- (b) Compare error detection and error correction. Explain various error detection methods with the help of suitable example.

Unit-II

4. Differentiate OSI and TCP/IP model. Discuss various types of addresses associated with the layers of TCP/IP model.
5. Write notes on the following :
- (a) X.25
- (b) Frame relay

Unit-III

6. (a) Explain the mechanism of stop-and-wait ARQ with link utilization.
- (b) What is FDDI ? Explain its access method, time registers, timer and station procedure ?
7. (a) What is CSMA/CD ? Explain its working.
- (b) What is Token ring ? How is it different from Token bus ?