

(b) What is switching ? What are important switching techniques ? Does time division switching necessarily introduce a minimum delay at each switching stage ? If so, what is it ?

8.8

9. Explain the following :

(a) File Transfer Protocol

(b) Congestion control mechanisms

8.8

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Roll No : _____

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

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MCA (Regular) 3rd Semester
Examination, February-2022
(Current CBCS Scheme w.e.f. Dec-2017-18)

Paper-17MCA33C1
**DATA COMMUNICATION AND
COMPUTER NETWORKS**

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. Q No. **1** is compulsory. All questions carry equal marks.

- 1. (a) How are digital signals different from analog signals ?
- (b) What is token ring ?
- (c) What is cell switching ?

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(1)

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- (d) What is E-mail system ?
- (e) What are wireless networks ?
- (f) What is the significance of modulation ?
- (g) What is ISDN ? State its significance.
- (h) What is Metropolitan Area Network ? $2 \times 8 = 16$

Unit-1

- 2. (a) What do you mean by multiplexing ? List different types of multiplexing techniques possible for signals and outline the working of each.
- (b) What is synchronous data transmission ? How is it different from asynchronous data transmission ? Illustrate 10,6
- 3. Explain the following:
 - (a) Pulse code modulation
 - (b) Data encoding 8,8

Unit-II

- 4. (a) How are Gateways different from Bridges ? Discuss their significance in computer networks.
- (a) What is TCP/IP Reference Model ? How does it work ? Illustrate its working. 8,8

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- 5. (a) What is an IP packet ? What is the minimum overhead in sending an IP packet using PPP ? Count only the overhead introduced by PPP itself, not the IP header overhead.
- (b) What do you understand by ATM networks ? How do these work ? Illustrate. 8,8

Unit-III

- 6. (a) What is GSM/CD protocol ? How does work ? Illustrate.
- (b) What is HDLC ? Explain HDLC with flow-control and error-control. 8,8
- 7. Explain the following :
 - (a) X.25 and its working
 - (b) Sliding Window protocol 8,8

Unit-IV

- 8. (a) What do you mean Routing ? What are various routing algorithms ? Discuss one important algorithm of your choice

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(3)

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