

Roll No.

67144

**MCA 3rd Semester (With New Notes)
(Non CBCS)**

Examination – December, 2018

DATA COMMUNICATION & 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. (a) How is digital signals different from analog signals ?
- (b) What is the significance of modulation ?
- (c) What is X.25 ? State its significance.
- (d) What is Metropolitan Area Network ?
- (e) What is token ring ?
- (f) What are wireless networks ?

(g) What is cell switching ?

(h) What is FTP ?

2 × 8 = 16

UNIT – I

2. (a) What is multiplexing ? List different types of multiplexing techniques possible for signals and outline the working of each. 10

(b) What is data transmission ? What are its different types ? Illustrate their importance 6

3. Explain the following :

(a) Pulse code modulation 5

(b) Error-correcting codes 6

(c) Data encoding 5

UNIT – II

4. (a) What are ATM networks ? Illustrate their importance. 6

(b) What is OSI reference model ? Illustrate the model by detailing out all-important features. 10

5. (a) What is TCP/IP Reference Model ? Illustrate its working through diagram. 8

(b) 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. 8

UNIT – III

6. (a) What are IEEE standards for LAN ? Discuss their significance and illustrate their usefulness in detail. 8

(b) What is HDLC ? Explain HDLC with flow-control and error-control. 8

7. Explain the following :

(a) CSMA/CD protocol 8

(b) Satellite networks 8

UNIT – IV

8. (a) What is switching ? Does time division switching necessarily introduce a minimum delay at each switching stage? If so, what is it ? 6

(b) What is routing ? Discuss one important algorithm of your choice. 5

(c) Differentiate between Circuit switching and packet switching. 5

9. Explain the following :

(a) Congestion control mechanisms 8

(b) E-mail system 8