

Roll No.

67144

MCA 3rd Semester (with new notes)

Examination – November, 2017

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 : Question No. 1 is **compulsory**. Attempt **four** questions by selecting **one** question from each Unit. All questions carry equal marks.

1. (a) What is baud rate ? $2 \times 8 = 16$
(b) What are transmission errors ?
(c) What is X.25 ? State its significance.
(d) What is Metropolitan Area Network ?
(e) What is the concept of framing ?
(f) What are IEEE standards for LAN ?
(g) What is cell switching ?
(h) What is routing ?

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UNIT – I

2. (a) What is data encoding ? Illustrate the difference between Manchester and differential encoding. 8
- (b) What is multiplexing ? List different types of multiplexing techniques possible for signals and outline the working of each. 8
3. (a) What do you mean by bandwidth of a channel ? Discuss main factors on which channel's bandwidth depends. 7
- (b) Differentiate between the following : 9
- (i) Synchronous and Asynchronous transmission.
- (ii) Analog and Digital signals.
- (iii) Base-band and Broad-band transmission.

UNIT – II

4. (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. 8
- (b) What is OSI reference model ? Illustrate the model by detailing out all-important features. 8
5. Explain the following :
- (a) Frame Relay 8
- (b) ISDN 8

UNIT – III

6. (a) What are satellite networks ? Discuss their significance. 5
- (b) What are sliding window protocols ? What are the advantages and disadvantages of credits versus sliding window Protocols ? Explain. 6
- (c) What is ATM ? How does it work ? 5
7. (a) Data link protocols almost always put the CRC in a trailer, rather than in a header. Why ? 5
- (b) What do you understand by FDDI ? Discuss its objectives, relevance and usefulness. 6
- (c) What is HDLC ? Explain HDLC with flow-control and error-control. 5

UNIT – IV

8. (a) What is FTP ? Discuss its relevance. 6
- (b) What is switching ? What are different types of switching mechanisms ? Discuss their pros and cons. 10
9. Explain the following :
- (a) TCP/IP architecture 8
- (b) Congestion control mechanisms 8