CS/MCA/SEM-2/MCA-201/09

1. ....
Signature of Invigilator

2. .... **Reg. No.** | | | | | | | | | | | | | | | |
Signature of the Officer-in-Charge

Roll No. of the Candidate | | | | | | | | | | | | | | | |

CS/MCA/SEM-2/MCA-201/09

ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

DATA COMMUNICATION AND COMPUTER NETWORK (SEMESTER - 2)

Time : 3 Hours] [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

FOR OFFICE USE / EVALUATION ONLY

Marks Obtained

	Group – A										Group – B			Group – C				
Question Number																	***Total Marks***	***Examiner's Signature***
Marks Obtained																		

....
Head-Examiner/Co-Ordinator/Scrutineer

2206 (03/06)

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ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

DATA COMMUNICATION AND COMPUTER NETWORK

SEMESTER - 2

Time : 3 Hours] [Full Marks : 70

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : 10 × 1 = 10

i) The SQL queries are running in

a) Data link Layer b) Transport Layer

c) Application Layer d) Session Layer. ☐

ii) The maximum data can be carried by Token Ring is

a) 1515 b) 4500

c) 3609 d) 8182. ☐

iii) The maximum length of the data field in Token Bus is

a) 8714 b) 8182

c) 8823 d) 4500. ☐

iv) To specify the "Token Passing" the frame control field could be

a) 0000 1100 b) 0000 1000

c) 0000 0001 d) 0000 1010. ☐

v) LLC comes under IEEE

a) 802·1 b) 802·2

c) 802·3 d) 802·11. ☐

vi) If *L* is the distance of separation between two stations then the propagation delay should be

a) 2·5L b) L

c) 3L d) 2L. ☐

vii) The function of Abort frame is to

a) start transmission b) stop transmission

c) both (a) and (b) d) none of these. ☐

viii) Manchester encoding is …… encoding.

a) return to zero b) non-return to zero

c) return to one d) none of these. ☐

ix) The Ethernet address is

a) 6 bytes b) 3 bytes

c) 8 bytes d) depends on media. ☐

x) The sliding window protocol uses …… connection.

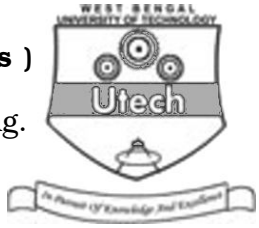
a) half duplex b) simplex

c) full duplex d) all of these can be possible. ☐

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15



2. Explain the FDDI frame format.

3. Using NRZ-L and NRZ-I line encoding techniques encode the following binary strings :

   a) 11000010

   b) 01011011.

4. How does PSK differ from QPSK ? Describe the method of ASK signal generation.

5. What is CSMA/CA ? Explain why CSMA/CD cannot be used for wireless LAN.

6. What are the advantages of IPV6 over IPV4 ?

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. a) Why is the contention slot of CSMA/CD protocol is 2 ?

   b) How can a station join and leave from a Token Ring LAN ?

   c) What is asynchronous serial transmission ?

   d) Describe the priority scheme of a Token Bus LAN.

   e) What is the function of preamble field of the 802·3 LAN ?

   f) Why is 802·4 called the Logical Ring ? (3 + 3 + 2 + 2 + 2 + 3)

8. a) Assume six devices are arranged in a mesh topology. How many cables are needed ? How many ports are needed for each device ?

b) What are baud rate and bit rate ? Establish the difference between the two.

c) What are the advantages of FM technique over AM technique ?

d) What is bit stuffing in HDLC ?

e) Explain how traffic shaping controls the congestion in a network.

(5 + 4 + 2 + 1 + 3)

9. a) In a stop-and-wait ARQ system, the bandwidth of the line is 1 Mbps and 1 bit takes 20 ms to make a round trip. If the system data frames are 1000 bits in length, what is the utilization percentage of the link ?

b) Describe a twisted-pair cable.

c) What are the advantages of optical fibre over twisted pair and coaxial cables ?

5 + 5 + 5

10 a) What do you mean by network security ? What are the protocols used for making network more secure ?

b) Find out the least cost route from *A* to *G* using Dijkstra's routing algorithm.

Dia.

(3 + 7) + 5

11. Write short notes on any *three* of the following : 3 × 5 = 15

a) DNS

b) FM

c) IEEE 802·6

d) GEO satellite

e) Piggybacking.

END