(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 1457 Roll No. | | | | | | | | | | |

MCA
(SEMESTER-IV) THEORY EXAMINATION, 2012-13
COMPUTER NETWORKS

Time : 3 Hours] *[Total Marks : 100*

Note : The question paper contains three sections, Section – A, Section – B and Section – C with the weightage of **20, 30** and **50** marks respectively. Follow the instructions as given in each Section.

SECTION – A

1. Attempt **all** parts. **10 × 2 = 20**

   (a) What is IMAP 4 ? Discuss in brief.

   (b) What are the differences between IPv4 & IPv6 ?

   (c) What is Topology ? Describe the difference between Star & Mesh Topology.

   (d) What is Networking model ? List the advantages of Networking model.

   (e) Define Data Encapsulation with an example.

   (f) What are the differences between Routed & Routing Protocol ?

   (g) What are the benefits of Layered Protocol specification ?

   (h) Explain the modulation techniques used by ADSL Technology.

   (i) Explain the function of DTE & DCE.

   (j) Explain the responsibilities of Data Link Layer.

SECTION – B

2. Attempt any **three** parts of this section. **3 × 10 = 30**

   (a) Differentiate between guided and unguided transmission media ? Also explain Error detection algorithm.

   (b) With neat diagrams, explain the configuration of a step-by-step switching system.

(c) Explain the term Topology & Access method used in LAN's. Discuss the CSMA/CD and CSMA/CA protocols.

(d) What is flow control ? What is RTS/CTS ? What is Xon/Xoff ? Also explain the concept of virtual circuit.

(e) Explain different types of Compression Techniques and Communication securities available in application layer.

SECTION – C

Attempt **all** questions in this section. **5 × 10 = 50**

3. Attempt any **two** parts of the following : **2 × 5 = 10**

(a) What are the different types of networking / internetworking devices ?

(b) What is the difference between OSI & TCP/IP Model ?

(c) Write short note on ISDN.

4. Attempt any **two** part of the following : **2 × 5 = 10**

(a) What are the different categories of Fast Ethernet ? Explain.

(b) Describe various fields in frame format of FDDI ?

(c) What is Error Detection ? What are its methods ?

5. Attempt any **two** part of the following : **2 × 5 = 10**

(a) Explain how hamming code can be used to correct burst errors.

(b) Discuss the notation, representation and address space of IPv6.

(c) How to correct the Congestion Problem ? Explain.

6. Attempt any **one** part of the following : **1 × 10 = 10**

(a) Explain UDP design issues and connection management methods.

(b) Explain TCP/IP protocols architecture.

7. Attempt any **one** part of the following : **1 × 10 = 10**

(a) Explain Diffie-Hellman key Exchanger.

(b) How firewall protection works ? Explain with examples.