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Total Pages : 3

220103

December, 2019

MCA- 1 SEMESTER

Data Communication & Network Analysis (MCA-17-105)

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.*
2. *Answer any four questions from Part -B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART - A

1. (a) Differentiate between Token Ring and Token bus. (1.5)

   (b) Compare port address, IP Address and MAC Address. (1.5)

   (c) What is the need of Supernetting? (1.5)

   (d) What is meant by network address and default Address? (1.5)

(e) What is loop back address? (1.5)

(f) Discuss Error Detection and Correction with suitable example. (1.5)

(g) Explain the protocols required for sending and receiving email. (1.5)

(h) What are the usages of HTTP and FTP? (1.5)

(i) How forwarding is different than routing? (1.5)

(j) What DNS? Explain the resolution process of DNS. (1.5)

PART - B

2. (a) State the reasons for having layered protocol architecture. Discuss in detail the functions of each layer of OSI reference model along with the associated services and protocols. (10)

(b) Differentiate between :

(i) LAN and WAN.

(ii) TCP and UDP. (5)

3. (a) Compare IPv4 with IPv6. Explain the frame format of IPv4 in detail. (8)

(b) Explain the Services of Transport layer. (7)

4. What is Congestion Control? How is it different from Flow Control. Discuss the Leaky Bucket Algorithm & its various disadvantages. (15)

5. (a) Explain why collision is an issue in a random access protocol but not in controlled access or channelizing protocols. Also discuss CSMA protocol. (7)

(b) Differentiate between ATM & frame relay. Discuss the ATM cell structure. (8)

6. Differentiate between :

(i) Synchronous and Asynchronous transmission.

(ii) Bridges and gateways.

(iii) Multicast routing and unicast routing techniques (15)

7. Write short notes on : (any *three*)

(i) Pulse Code Modulation.

(ii) IEEE 802.4.

(iii) Proxy servers.

(iv) ICMP. (15)