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MCA-19

Data Communication and Computer Network

Fifth Semester

Examination-2019

Time : **3** *Hours* *[Maximum Marks : 80*

Note : This paper is of Eighty (80) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section–A

(Long Answer Type Questions)

Note : Section A contains Five (05) long-answer-type questions of Fifteen (15) marks each. Learners are required to answer any three (03) questions only. **(3×15=45)**

1. What is a Computer Network? Explain the differences between LAN, MAN and WAN with respect to their topology, transmission rate and error rates.

2. Write the role of Data link layer in OSI model. Explain the services and functions provided by Data link layer and also, explain the importance of its sub layers.

3. Explain the importance and functions of layer 2 and layer 3 switches. Also, write advantages and disadvantages of each.

4. Compare and contrast in detail the delivery of data units in the data link, network and transport layer.

5. Write short notes on any three from the following :

   (a) Connection and Connection-Oriented Services

   (b) Client-Server Model

   (c) Unicast Routing Protocols

   (d) Transmission Media

Section–B

(Short-Answer-Type Questions)

Note : Section 'B' contains Eight (08) short-answer-type questions of Seven (07) marks each. Learners are required to answer any Five (05) questions only. **(5×7=35)**

1. Explain the role of amplifier, repeater, bridges and routers in network communication.
2. Explain the differences between simplex, half-duplex and full duplex transmissions with example.
3. What are the disadvantages of circuit switching? How these disadvantages are rectified by packet switching?
4. What do you understand by Congestion in networks? Write the reasons of occurring congestion in Networks.
5. Write the relative advantages and disadvantages of asynchronous and synchronous modes of data transmission.
6. Explain the various addressing classes in IPV4 protocol.
7. What is a TCP? Explain the role and importance of TCP in Data communication.
8. What is SMTP in Data Communication and Computer Networks? Explain.