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December 2022

BCA-Vth SEMESTER

Data Communication and Networking (BCA-17-303)

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) What is the difference between pure ALOHA and slotted ALOHA. (1.5)

(b) What do you mean by flooding? (1.5)

(c) What is the difference between gateway and bridge? (1.5)

(d) What is a protocol? (1.5)

(e) What is data rate and baud rate? (1.5)

(f) What do you mean by synchronous transmission? ((1.5)

(g) What is dial-up Networking? (1.5)

(h) What do you mean by the satellite communication?

(i) What is local area network (LAN)? (1.5)

(j) What do you mean burst error? Give example. ((1.5)

PART–B

2. (a) What is topology? Describe various types of topologies in computer network with example. (8)

(b) What is transmission media ? Explain the various types of guided transmission media. (7)

3. (a) What is multiplexing? Explain the various types of Multiplexing Techniques by giving suitable example. (7)

(b) What is OSI model? Explain the functionalities of the different layer of the OSI model in detail. (8)

4. (a) What do you mean by the flow control? Explain the Go-Back-N Automatic Repeat Request (Go-Back – N ARQ) protocol by taking suitable example. (7)

(b) What do you mean by the congestion in the network? How we do control the congestion? Explain. (8)

5. (a) What is routing? Explain the distance vector routing by taking suitable example. (8)

(b) What is switching? Explain the virtual circuit network and datagram network? (7)

6. (a) How does carrier sense multiple access with collision detection (CSMA/CD) work? Explain it. (7½)

(b) What is hamming distance? Explain the single parity check code for error detection by taking suitable *example.* (7½)

7. Write short note on following : (5×3=15)

(a) Representing data as Analog Signals.

(b) Encryption methods.

(c) Fast Ethernet.