H Roll No. .....

TBC–402

B. C. A. (FOURTH SEMESTER)
MID SEMESTER EXAMINATION,
April/May, 2022

DATA COMMUNICATION &
COMPUTER NETWORK

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any ***one*** of the sub-questions.

(ii) Each question carries 10 marks.

1. (a) Define computer network based on topologies with a neat diagram.

10 Marks (CO1)

OR

(b) Differentiate between synchronous and asynchronous transmission with a suitable example. 10 Marks (CO1)

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2. (a) Differentiate between analog and digital transmission with their usage in network application. 10 Marks (CO2)

OR

(b) Discuss LAN, MAN and WAN with suitable examples. 10 Marks (CO2)

3. (a) Assume six devices are arranged in a mesh topology. How many cables are needed ? How many ports are needed for each device ? 10 Marks (CO1)

OR

(b) Consider a noiseless channel with a bandwidth of 3000 Hz transmitting a signal with two signal levels. What can be the maximum bit rate ? 10 Marks (CO1)

4. (a) What is modulation ? Discuss analog to digital modulation technique in detail. 10 Marks (CO2)

OR

(b) What is transmission media ? Explain any *three* unguided media with example. 10 Marks (CO2)

5. (a) We need to send 265 kbps over a noiseless channel with a bandwidth of 20 kHz. How many signal levels do we need ? 10 Marks (CO1)

OR

(b) Define multiplexing. Discuss frequency division multiplexing with a suitable example. 10 Marks (CO1)