

Code: 19CS3303

II B.Tech - I Semester – Regular Examinations – MARCH 2021

**DATA COMMUNICATION
(COMPUTER SCIENCE & ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

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- Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.
4. All parts of Question paper must be answered in one place.
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PART – A

1. a) List out the components of data communication.
- b) What do you mean by multiplexing?
- c) Briefly discuss the difference between signal element versus data element.
- d) List out the types of transmission media.
- e) Discuss any two points to explore the necessity of switching.

PART – B

UNIT – I

2. a) Explain how the data can be represented in data communication. List out the classifications of data flow with neat sketch. 6 M
- b) Sketch the diagram and explain different types of networks. 6 M

OR

3. a) Explain with neat sketch the TCP/IP Model. 6 M
b) Compare and contrast between OSI and TCP/IP reference models. 6 M

UNIT – II

4. a) How digital signals are different from analog signals? Explain supporting terms with suitable example. 6 M
b) What is transmission impairment? Explain supporting causes with an example. 6 M

OR

5. a) Explain different approaches for the transmission of digital signals. 6 M
b) Discuss the following: 6 M
i) Bandwidth ii) Bandwidth-delay product

UNIT-III

6. a) How data rate is different from signal rate? Give a brief summary of line coding schemes. 6 M
b) Describe the working principle of PCM with neat sketch. 6 M

OR

7. a) Discuss the advantage of DM over PCM. Explain supporting components with neat sketch. 6 M

- b) Explain any two types of analog-to-analog modulations. 6 M

UNIT – IV

8. a) How coaxial cable is different from twisted-pair cable? List out its advantages. Discuss supporting standards and connectors. 6 M
- b) What are the propagation modes available for Fiber-optic cable? List out supporting merits and demerits. 6 M

OR

9. a) Give a brief overview on Unguided media. Explain supporting propagation methods. 6 M
- b) Explain the concept of microwaves with an example. 6 M

UNIT – V

10. a) Discuss the role of Switching in TCP/IP protocol suite. 6 M
- b) Compare and contrast between circuit-switched network and packet-switched network. 6 M

OR

11. a) Discuss the working principle of datagram networks. Explain the role of routing table. 6 M
- b) Describe various structures of circuit switches in detail. 6 M