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15CS46

## Fourth Semester B.E. Degree Examination, July/August 2021 Data Communication

Time: 3 hrs.

Max. Marks: 80

**Note: Answer any FIVE full questions.**

- 1 a. Define data communication. Explain the fundamental characteristics of a data communication system with a neat diagram. Explain the components of data communication. (08 Marks)  
b. Explain TCP/IP protocol suite of computer networks with a neat diagrams. (08 Marks)
- 2 a. Explain different causes for transmission impairments during signal transmission through media. (08 Marks)  
b. Define line coding. List out its characteristics. Represent the sequence 10100110 using polar and biphasic scheme. (08 Marks)
- 3 a. Explain with suitable diagram PCM encoder used for analog to digital conversion with example. (08 Marks)  
b. Explain transmission modes. (08 Marks)
- 4 a. Define multiplexing. Explain with neat diagram FDM. (06 Marks)  
b. With relevant diagrams, explain the data transfer phase in a virtual circuit network. (10 Marks)
- 5 a. Explain CRC error detection method with an example. (08 Marks)  
b. Explain the types of errors. (04 Marks)  
c. Define cyclic codes. Mention the advantages of cyclic codes. (04 Marks)
- 6 a. With a neat diagram, explain stop and wait protocol with respect to noisy channel. (10 Marks)  
b. Explain different frame types in HDLC. (06 Marks)
- 7 a. What is channelization? List and explain the channelization protocols. (10 Marks)  
b. Describe Gigabit Ethernet. (06 Marks)
- 8 a. Write a short note on fast Ethernet. (06 Marks)  
b. Explain Carrier Sense Multiple Access with Collision Detection (CSMA/CD). (06 Marks)  
c. Define Bluetooth and its architecture. (04 Marks)
- 9 a. Explain satellite networks and its categories. (08 Marks)  
b. Explain the operation of cellular telephony. (08 Marks)
- 10 a. Explain mobile IP with phases. (10 Marks)  
b. Write a short note on ICMPV4. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.