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10CS55

Fifth Semester B.E. Degree Examination, June/July 2018
Computer Networks – I

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. What is the difference between data and information? (02 Marks)
b. What are the basic characteristics of data communication? Explain. (06 Marks)
c. What are the functional roles of the following:
(i) Physical layer (ii) Data link layer (iii) Network layer (12 Marks)
(iv) Transport layer.
- 2 a. What do you mean by a composite signal? How does it help in digital data transmission? Explain. (04 Marks)
b. Define : (i) Bit rate (ii) Bit length. (02 Marks)
c. What is meant by Transmission impairment? Discuss 'Noise'. (10 Marks)
d. What is the propagation time, if the distance between the two points is 12000 km? Assume propagation speed in the cable is 2.4×10^8 m/s. (04 Marks)
- 3 a. Why does multiplexing significant in data transmission? (02 Marks)
b. What is synchronous TDM? Explain. (04 Marks)
c. What is the main purpose of spread spectrum? Explain FHSS. (08 Marks)
d. What do you mean by datagram network? Explain its working principle. (06 Marks)
- 4 a. What do you mean by virtual circuit network? Explain the establishment phase of virtual circuit network. (08 Marks)
b. Which are the two types of transmission errors? Explain. (04 Marks)
c. Discuss the error detection and correction techniques in block coding. (08 Marks)

PART – B

- 5 a. What do you mean by flow control and error control? Discuss its improvisation from stop-and-wait ARQ to Go-Back-N protocol and Go-Back-N to selective repeat protocol. (12 Marks)
b. What is the frame format of PPP? Explain. (08 Marks)
- 6 a. Explain slotted ALOHA. (08 Marks)
b. Write the chip sequence for 2-stations and for 4-stations using Walsh table. (04 Marks)
c. What is the role of MAC sublayer? Explain 802.3 MAC-frame. (08 Marks)
- 7 a. What is GSM? Explain. (08 Marks)
b. What are the issues with Hidden and Exposed node? Explain. (06 Marks)
c. Which are the layers of Bluetooth? Explain. (06 Marks)
- 8 a. Compare IPV₄ over IPV₆. (04 Marks)
b. What is NAT? Explain with an example. (08 Marks)
c. What is the need IP addressing scheme? Explain IPV₄. (08 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 number to evaluators and/or scribbles written up to 10% of the total marks will be treated as malpractice.