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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: (12 Marks)
 - (i) Physical layer
 - (ii) Data link layer
 - (iii) Network layer
 - (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, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.