

--	--	--	--	--	--	--	--	--	--

**Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020**

**Computer Network – 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 Data Communication? List and explain five components of data communication. (06 Marks)
- b. Give the comparison between LAN, WAN, MAN. (06 Marks)
- c. Explain the OSI Reference Model for computer Networks. (08 Marks)
- 2 a. Write a descriptive note on three causes of transmission impairments. (08 Marks)
- b. Discuss Nyquist bit rate and Shannon's channel capacity. (06 Marks)
- c. Explain the transmission modes. (06 Marks)
- 3 a. What is multiplexing? Explain with a neat diagram FDM. (06 Marks)
- b. What is switching? Explain Datagram Networks and Virtual Circuit Networks. (08 Marks)
- c. What is spread spectrum? Explain the Frequency Hopping Spread Spectrum (FHSS). (06 Marks)
- 4 a. Explain error detection and error correction with respect to block coding. (10 Marks)
- b. Draw a CRC encoder and decoder for CRC code with C(7, 4). Also explain how this CRC design works, with an example. (10 Marks)

**PART – B**

- 5 a. Explain salient features of:
  - i) Stop-and-wait protocol
  - ii) Stop-and-wait ARQ protocol
 (10 Marks)
- b. Explain the frame format and transition phases of PPP. (10 Marks)
- 6 a. What is Random Access? Explain following Random Access Protocols:
  - i) Slotted ALOHA
  - ii) CSMA/CD
 (10 Marks)
- b. Describe Frame format of IEEE 802.3MAC frame. What are salient features of fast Ethernet? (10 Marks)
- 7 a. Explain IEEE 802.11 and Bluetooth architecture. (10 Marks)
- b. With neat diagram, explain cellular system. (10 Marks)
- 8 a. Explain with respect to IPV4, class full addressing and classless addressing. (10 Marks)
- b. Explain in detail IPV6 packet format and also briefly explain the advantages of IPV6. (10 Marks)

\* \* \* \* \*

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.