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10CS55

Fifth Semester B.E. Degree Examination, Aug./Sept. 2020
Computer Networks – I

Time: 3 hrs. Max. Marks:100

Note: ***Answer FIVE full questions, selecting atleast TWO questions from each part.***

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.

PART – A

1 a. Explain the five components of data communication system with simple diagram. **(06 Marks)**
b. List the 3 criteria necessary for an effective and efficient network. **(04 Marks)**
c. Write and explain OSI reference model. **(10 Marks)**

2 a. Explain the causes of transmission impairment. **(08 Marks)**
b. Define : i) Bandwidth ii) Latency iii) Transmission time. **(06 Marks)**
c. Represent the given sequence 010011 in
i) Unipolar ii) Manchestor iii) AMI schemes. **(06 Marks)**

3 a. Explain FDM technique with a simple diagram. **(08 Marks)**
b. Explain omnidirectional and unidirectional antenna with 2 applications. **(08 Marks)**
c. List the 3 phases of a circuit switched network. **(04 Marks)**

4 a. Explain the working of encoder and deceder for hamming code, with a neat diagram. **(10 Marks)**
b. Find the codeward, using CRC given dataward '1001' and generator '1011'. **(10 Marks)**

PART – B

5 a. Explain stop and wait protocol with sender and receiver algorithm. **(10 Marks)**
b. Explain frame format and transition phases of point – to – point protocol. **(10 Marks)**

6 a. Explain :
i) Reservation controlled access
ii) FDMA. **(12 Marks)**
b. Explain 802.3 MAC frame format. **(08 Marks)**

7 a. Write short note on :
i) IEEE 802.11 architecture
ii) Bluetooth. **(10 Marks)**
b. With respect to the functionality define repeaters, bridges, routers, gateways. **(10 Marks)**

8 a. Draw IPv4 address format and explain. **(10 Marks)**
b. Briefly discuss the advantages of IPv6. **(06 Marks)**
c. Find the class of each address.
i) 00000001 00001011 00001011 11101111
ii) 11000001 10000011 00011011 11111111
iii) 14.23.120.8
iv) 252.5.15.111 **(04 Marks)**

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