



R20 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech V Semester Regular Examinations, January 2023

Subject code:3P5FD

COMPUTER NETWORKS (INFORMATION TECHNOLOGY)

Maximum Marks: 70

Date:11.01.2023 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Explain the characteristics of WAN.
- 2 Write short notes on any two network topologies.
- 3 What are the issues in data link layer?
- 4 List controlled access protocol.
- 5 Write about IP address. Give one example.
- 6 List out the Unicast Routing Protocols?
- 7 Write short notes on SCTP protocol?
- 8 List out the Congestion Control Algorithms?
- 9 Write about WWW.
- 10 What are the goals of Network Security?

Part-B

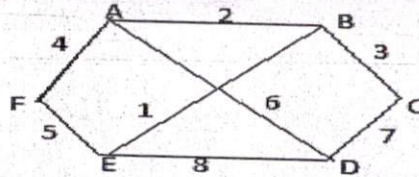
Answer All the following questions.

(10MX 5=50Marks)

- 11 A. Describe in detail about Lightwave transmission. [5]
B. Discuss about the various transmission media available at the physical layer [5]
- OR
- 12 A. Compare and contrast TCP/IP and OSI reference models. [6]
B. Explain about circuit switched networks. [4]
- 13 A. What are the different types of error detection methods? Explain the CRC error detection technique using generator polynomial $x^4 + x^3 + 1$ and data 11100011.
B. Explain about noiseless channel protocol. [5+5]
- OR
- 14 In detail, explain the various ALOHA protocols. [10]
- 15 A. In classful addressing how is an IP address in class A, Class B and Class C divided? [3]
B. How would you describe the operation of Address resolution protocol? [7]

OR

- 16 A. Using Distance vector routing algorithm for the given network. The following vectors have just come in to router C: from B: (5, 0, 8, 12, 6, 2); from D: (16, 12, 6, 0, 9, 10); and from E: (7, 6, 3, 9, 0, 4). The cost of the links from C to B, D, and E, are 6, 3, and 5, respectively. What is C's new routing table? Give both the outgoing line to use and the cost. [5]



- B. With a neat sketch explain the benefits of Unicast routing algorithm. [5]
- 17 A. Explain the various steps that are followed in connection establishment in TCP. [5M]
B. Write the differences between UDP and TCP protocols? [5]
- OR
- 18 A. Explain the services of TCP. [5]
B. Describe about different categories congestion control. [5]
- 19 Write short notes on the following: [2+2+2+2+2]
(a) TELNET (b) FTP (c) DNS (d) E-Mail (e) SNMP
- OR
- 20 A. List and briefly define categories of Security Services and attacks. [5]
B. Describe the model for network layer security with neat sketch. [5]