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B.E. Semester V Examination – Oct – 2024

Subject Code: CE505-N (CE/CSE)

Subject Name: Computer Networks

Date: 26/10/2024

Time: 12:30 pm to 03:30 pm

Total Marks: 70

Instructions:

1. Answer each section in separate answer sheet.
2. Use of scientific calculator is permitted.
3. All questions are Compulsory.
4. Indicate clearly, the option you attempt along with its respective question number.
5. Use the last page of main supplementary of rough work.

Section-I

Q-1 (A) Explain the OSI reference model with functionalities of each layer. [5]

(B) Explain various network topology [5]

(C) Explain the various guided transmission media. [5]

OR

(C) Explain the various Un-guided transmission media. [5]

Q-2 (A) Discuss various networking Devices of bottom three layers. [5]

(B) Compare Go-Back-N and Selective Repeat. [5]

OR

(A) Write short note on ALOHA. [5]

(B) Explain any two collision-free protocols. [5]

Q-3 (A) Find the codeword to be sent if the dataword is 1010 using CRC. Use the divisor as 1011 and the codeword should be of 7 bits. [5]

(B) Given an IP address 10.20.100.50/8. Number of Subnets to be formed is 4. [5]

1) Find the Network address and Broadcast address of all 4 subnets.

2) A host having an IP address 10.26.155.1 belongs to the same network.

True or False. Justify your answer.

3) Find the Subnet Mask.

4) Find the number of bits reserved for subnetting.

5) Find number of hosts in each subnet.

OR

(A) Find the checksum for following words (427E, 756F, 716F, 666A). [5]

(B) A host with an IP address 169.155.23.59 resides in an institution. The network is divided into subnets with max 32 IP per subnet. Answer the following questions: [5]

1. What is the subnet mask of the host IP?

2. What is the network address and broadcast address for host IP?

3. How many subnets are there in the network?

Answer the above question with proper calculations.

Section-II

- Q-4** (A) What is framing and explain various framing techniques. [5]
(B) Compare Datagram and Virtual-Circuit network based on various parameters. [5]
(C) Draw and explain IP packet header. [5]

OR

- (C) Explain count to infinity problem. [5]
- Q-5** (A) Compare IPV4 and IPV6. [5]
(B) Write short note on Distance Vector routing with example. [5]

OR

- (A) Write short note on Link state routing with example. [5]
(B) Draw and explain TCP packet header and UDP packet header. [5]
- Q-6** (A) Explain Congestion control in Transport Layer. [5]
(B) Explain DHCP with various methods. [5]

OR

- (A) Write a short note on Electronic mail (SMTP). [5]
(B) Explain the Multiple Access with Collision Avoidance protocol for wireless LANs. [5]

---Good Luck---