UNIVERSITY OF ENGINEERING AND MANAGEMENT, KOLKATA

Degree: B. Tech Stream: CSE

Year:3rd

Even Semester Term - I Examination, February - 2024

Subject Code: PCCCSE602

Subject Name: Computer Networks

Full Marks: 30 Duration: 1 Hour

Date:28.02.2024 Time: 2.30 PM – 3.30 PM

Part - A

Attempt 5 questions

Each question carries 2 marks (2 × 5)

1. Differentiate between Persistent and Non-persistent http.

or

Define routing.

2. Demonstrate the need for sub-netting.

or

Draw the block diagram of a simple communication model.

3. Explain transmission system utilization with example in connection with communication tasks.

or

In classless addressing, can two different blocks have the same prefix length? Explain.

4. Which among the following LAN topologies is cost effective when the number of devices increases? Why? (i) Mesh (ii) Star

or

What is the need for fragmentation?

5. How does recursive DNS query resolution differ from iterative DNS query resolution?

or

An organization is granted the block 130.56.0.0/16. Administrator wants to create 1024 subnets. Find the number of addresses in each subnet.

Part - B

Attempt 2 questions

Each question carries 5 marks (5 × 2)

6. Explain Diffie-Hellman algorithm with suitable example.

or

Explain the architecture of e-mailing system.

7. What will be the CIDR aggregation on the following IP Addresses-
128.56.24.0/24
128.56.25.0/24
128.56.26.0/24
128.56.27.0/24

or

a) What is an advantage of a hierarchical name space over a flat name space for a system the size of the Internet? **2+3**

b) Differentiate between distance vector routing and link state routing.

Part - C

Attempt 1question

Each question carries 10 marks (10 × 1)

8. a) Explain RSA Algorithm with suitable examples. **5+5**

b) The routing table of a router is shown below-
On which interfaces will the router forward packets addressed to destination 128.75.43.16 and 192.12.17.10 respectively?

Destination	Mask	Interface
128.75.43.0	255.255.255.0	eth0
128.75.43.0	255.255.255.128	eth1
192.12.17.5	255.255.255.255	eth3
default		eth2

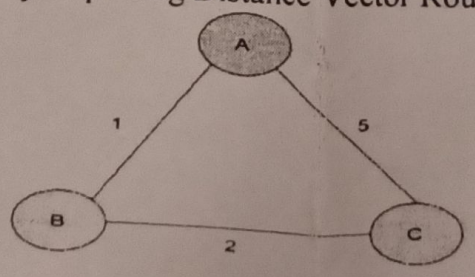
or

a) An ISP is granted a block of addresses starting with 190.100.0.0/16 **4+6** (65,536 addresses). The ISP needs to distribute these addresses to three groups of customers as follows:

1. The first group has 64 customers; each needs 256 addresses.
2. The second group has 128 customers; each needs 128 addresses.
3. The third group has 128 customers; each needs 64 addresses.

Design the sub-blocks and find out how many addresses are still available after these allocations.

b) Consider the following network; three routers are there: A, B, and C with AB=1, BC=2, and CA=5. Write down the routing table information step by step using Distance Vector Routing algorithm.



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