REFNO070197

Roll No. 23419CMP029.

MASTER OF COMPUTER APPLICATION (TWO YEAR) SEMESTER I EXAMINATION 2023-24

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M.Sc. in COMPUTER SCIENCE SEMESTER I EXAMINATION 2023-24

CS - 206 : Computer Networks

Time : Three hours **Max. Marks : 70**

(WRITE YOUR ROLL NO. AT THE TOP IMMEDIATELY ON THE RECEIPT OF THIS QUESTION PAPER)

NOTE: Answer any five questions. Question number one is compulsory.

1) Write a short note on any **four** out of six techniques: 3.5 x 4 = [14]

a) Bootstrap Protocol (BOOTP)
b) User Datagram Protocol (UDP)
c) Leaky Bucket Technique
d) TELNET
e) File Transfer Protocol (FTP)
f) Digital Signature

2) a) Discuss the Address Resolution Protocol (ARP) and describe its packet format. [6]
b) An ISP is granted a block of addresses starting with 190.100.0.0/16 (65,536 addresses). The ISP needs to distribute these addresses to three groups of customers as follows: [8]
   i. The first group has 64 customers; each needs 256 addresses.
   ii. The second group has 128 customers; each needs 128 addresses.
   iii. The third group has 128 customers; each needs 64 addresses.

   Design the subblocks and find out how many addresses are still available after these allocations.

3) a) What is a routing table in network layer? Discuss the common fields in a routing table. [6]
b) In an IPv4 datagram, the M bit is 0, the value of HLEN is 5, the value of total length is 200, and the offset value is 200. What is the number of the first byte and number of the last byte in this datagram? Is this the last fragment, the first fragment, or a middle fragment? [8]

4) a) What is Transmission Control Protocol (TCP)? Discuss its features in details. [6]
b) Describe the working of Distance Vector Routing (DVR) protocol with suitable diagrams. [8]

5) a) What is congestion control? Describe Close-loop congestion control techniques. [6]
b) What is Domain Name System (DNS)? Describe Recursive and Iterative Resolution techniques. [8]

6) a) What is key management? Discuss Symmetric and Asymmetric techniques. [6]
b) What is Network Management System? Describe the functions of a network management system. [8]

END