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MANIPAL ACADEMY OF HIGHER EDUCATION, MANIPAL
MANIPAL SCHOOL OF INFORMATION SCIENCES, MANIPAL

FIRST SEMESTER MASTER OF SCIENCE – M.Sc. (INFORMATION SCIENCE) DEGREE
EXAMINATION – NOVEMBER 2021
SUBJECT: MIS 509 – COMPUTER NETWORKS

Wednesday, December 1, 2021

Time: 10.00 – 13.00 Hrs.

Max.Marks:100

All questions carry 10 marks each

- 1 Describe an Ethernet Datagram Frame and types of NIC connectors. (TLO 1.2) 10 Marks
- 2 Describe the responsibilities of the Data Link layer and Application layer in the OSI model? 10 Marks
(TLO 1.1)
- 3 Discuss regarding the different connection types and types of delivery with a network 10 Marks
example in IP delivery and routing. (TLO 2.1)
- 4 An ISP is granted a block of addresses starting with 173.200.0.0/16. The ISP needs to
distribute these addresses to three groups of customers as follows: 10 Marks
 - a. The first group has 256 customers; each need 128 addresses.
 - b. The second group has 32 customers; each need 256 addresses.
 - c. The third group has 32 customers; each need 64 addresses.
Design the sub-blocks and find out how many addresses are still available after these
allocations. (TLO 1.3)
- 5 Write a short note on the following special addresses with suitable diagrams: (TLO 1.3) 5+5 Marks
 - a. This host on this network
 - b. Limited Broadcast Address
- 6 What is DHCP? Illustrate the various Transition States in DHCP. (TLO 3.2) 4+6 Marks