ix.   Which of the following describes the function of ARP?   1
        a) It is used to map a 32-bit IP address to a 48-bit ethernet address.
        b) It is used to map a 48-bit ethernet address to a 32-bit IP address.
        c) It is used to map a 32-bit ethernet address to a 48-bit IP address.
        d) It is used to map a 48-bit IP address to a 32-bit ethernet address.

x.   In classless addressing, there are no classes but the addresses are still
        granted in
        a) Code   b) Section
        c) Block   d) None of the Above

Q.2 i.   An ALOHA network uses 19.2 kbps channel for sending packet of 100   2
            bits long size. What is maximum throughput for Pure ALOHA?
     ii.   Define MAC frame format.   3
     iii.   Explain the working of CSMA/CD and CSMA/CA.   5
OR   iv.   Explain IEEE 802 standards and it s variants.   5

Q.3 i.   What is NAT?   2
     ii.   A network administrator subnet the 192.168.10.0/24 network into   8
            subnets with /26 masks. How many equal-sized subnets are created?
            Find the network address, subnet mask and range of each subnet.
OR   iii.   A supernet has a first address of 205.16.32.0 and a supernet mask of   8
            255.255.248.0. How many blocks are in this supernet and what is the
            range of address?

Q.4 i.   Differentiate between IPv4 and IPv6.   3
     ii.   Explain working of ARP and RARP.   7
OR   iii.   Write short note on following: (Any three)   7
            a. Static and Dynamic channel allocation
            b. Ethernet performance
            c. DHCP
            d. OSPF

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Faculty of Engineering
Mid Sem I Examination September - 2022
CS3CO12 Computer Networks -

Programme: B.Tech.

Branch/Specialisation: CSE

Duration: 2 Hrs.

Maximum Marks: 40

Q.1 i. In _____, each station is forced to send only at the beginning of the   1
time slot.
a) pure ALOHA   b) slotted ALOHA
c) both (a) and (b)   d) neither (a) nor (b)

ii. In _____, collisions are avoided through the use of three strategies: 1
the interframe space, the contention window, and acknowledgments.
a) CSMA   b) CSMA /CA
c) CSMA/ CD   d) BRAP

iii. The maximum throughput for pure aloha is....   1
a) 18.4   b) 18.8
c) 36.4   d) 36.8

iv. A problem with Bitmap protocols is an overhead of ...... bit(s) per   1
station.
a) 0   b) 1
c) 2   d) 3

v. What Ethernet frame consists of _____   1
a) MAC address   b) IP address
c) Default mask   d) Network address

vi. What is the prefix length notation for the subnet mask 255.255.255.224?   1
a) /25   b) /26
c) /27   d) /28

vii. How many bits must be borrowed from the host portion of an address to   1
accommodate a router with five connected networks?
a) Two   b) Three
c) Four   d) Five

viii. In the Network Address Translation (NAT), all the outgoing packets go   1
through.........
a) NAT Router   b) Global Router
c) Local Router   d) Private Router