

Course Code : CST 414-1

MQNR/MW – 19 / 9660

**Seventh Semester B. E. (Computer Science and Engineering)
Examination**

Elective – II

INTERNET WORKING AND TCP/IP

Time : 3 Hours]

[Max. Marks : 60

Instructions to Candidates :—

- (1) Attempt all questions compulsory.
- (2) All questions carry marks as indicated against them.
- (3) Due credit will be given to neatness and adequate dimensions.
- (4) Assume suitable data and illustrate answers with neat sketches wherever necessary.

1. Answer in short :

- (a)
 - List the switching element used to connect Multi home devices with several ISP'S.
 - Name the layer that provides Fragmentation and segmentation at same layer.
 - Name the alternate term that is used for Internet draft specification.
 - State any two differences between IPv4 and IPv6.
 - Is TCP called a virtual connection ? Justify your answer.

5 (CO 1)
- (b) Identify the protocol that resolves physical address from the logical address. Illustrate how does flow control and Host routing updation is supported at IP Layer through ICMP mechanism.

5 (CO 1)

2. Solve any One from (a) and (b) :

- (a) An ISP is granted a block of address starting with 120.60.4.0/20. The ISP wants to distribute these blocks to 100 organizations with each organization receiving 8 addresses only. Design the sub block and give slash notation for each sub block. Find out how many addresses are still available after these allocations.

5 (CO 2)

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Contd.

- (b) An organization is granted the block 16.0.0.0/8. The administrator wants to create 500 fixed-length subnets :

- (a) Find the subnet Mask.
- (b) Find the number of addresses in each subnet.
- (c) Find the first and the last address in the first subnet.

Find the first and the last address in the last subnet (subnet 500).

5 (CO 2)

- (c) **Sketch** the configuration of a router, if we know only its routing table. The routing table for R1 is given in table below. Guess and **portray** its topology.

Mask	Network Address	Next hop Address	Interface Number
/26	140.6.12.64	180.14.2.5	m0
/24	130.4.8.0	190.17.6.20	m1
/16	110.70.0.0	----	m0
/16	180.14.0.0	----	m2
/16	190.17.0.0	----	m1
Default	Default	110.70.4.6	m0

5 (CO 2)

3. (a) Match the Pair and answer the following :—

1.	Internet Draft	Static Host Configuration
2.	ICMP	Multicast backbone
3.	BOOTP	Source Quench
4.	BGP	RFC
5.	DVMRP	Semi permanent connection

Define the basis of routing protocols. Can we have emulation of Multicasting with multiple unicasting ? What approaches are being followed to find shortest path tree for each group ? Discuss DVMRP in detail.

5 (CO 2)

- (b) In OSPF Link update packet how many sub packets are involved in sending packets from one autonomous system to another ? Explain them in detail.
5 (CO 2)
4. (a) Consider an Active Directory domain controller which was placed in a Head Office located at India, It is having a time zone of +GMT 5:30. If you are planning to add an additional domain controller in your branch office which is located at (e.g.) Japan with a +GMT 2.00 then answer the following :—
- (1) Do you need to create separate domain controller with separate domain at Japan since the time zone changes ?
 - (2) Do you need to create a separate time server to synchronize both the domain controllers ?
 - (3) Do we need to use the +GMT 2.00 at Japan, since no other options are available because of the changes in the time zone ?
5 (CO 3)
- (b) Discuss DNS records, Zones (What is the "in-addr.arpa" zone used for?), SRV records. How iterative and recursive resolution takes place in DNS ? Illustrate DNS Query and response message for Inverse PTR type of Query in Detail.
5 (CO 3)
5. Solve any **One** from (b) and (c) :—
- (a) Give the view of mobile data transfer, and answer the question as per information floated.
- We have the following information :—
- Mobile host home address : 130.45.6.7/16
- Mobile host care – of address : 14.56.8.9/8
- Remote host address : 200.4.7.14/24.
- Home agent address : 130.45.10.20/16.
- Foreign agent address : 14.67.34.6/8.
- Show the content of the IP datagram header sent from the remote host to the home agent.
4 (CO 4)

- (b) List the characteristics of Real time Audio video. TCP with all its sophistication is not suitable for interactive multimedia traffic explain the reason and sketch RTP header format. 6 (CO 4)
 - (c) Discuss the fundamental transactions of SSL protocol. How do PGP ensures protection to your emails ? 6 (CO 4)
- 6.
- (a) How many types of socket do exist ? Describe them with all function parameters included in it. 5 (CO 5)
 - (b) Make use of TCP Socket to build a client/server program in python environment. 5 (CO 5)