DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
B.TECH. SEMESTER V [Information Technology]
SUBJECT: (IT-505) Computer And Communication Network

Examination	**: Second Sessional**	**Seat No.**	**:**
Date	**: 04/09/2013**	**Day**	**:Wednesday**
Time	**: 11:15 to 12:30**	**Max. Marks**	**: 36**

INSTRUCTIONS:

1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Q.1 **Do as directed.** **[12]**

A Compare and contrast link-state and distance-vector routing algorithms. **[2]**

B A class C address has the following subnet mask 255.255.255.192.Which of the following are valid IP addresses under this network?(I)192.25.64.68(II)192.43.75.128(III)194.65.73.64(IV)194.75.74.131 **[2]**

C How to achieve good quality of service? **[2]**

D Which protocol is used to find internet errors? Which message it sends if congestion occurs? **[2]**

E What is multicasting? Give one example of multicast IP address. **[1]**

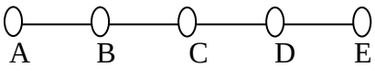
F What is the purpose of record route field in IPv4 header? **[1]**

G What is the difference between routing and forwarding? **[1]**

H Give the difference between congestion control and flow control. **[1]**

Q.2 Attempt **Any TWO** of the following questions. **[12]**

a **[I]** Explain count to infinity problem by solving example given below when A is getting down. **[4]**
After booting in routing table of B, C, D and E possesses the value are 2,4,6,8 respectively and each link cost is 2.



[II]Give the differences between virtual circuit subnet and datagram subnet. **[2]**

b **(1)**Find the subnetwork address for 200.34.22.156/28 **[1]**

(2)50 subnetworks are to be created from 150.193.0.0 each subnet is expected to have 750 hosts. Find the subnet mask. **[2]**

(3) An organization want 2013 hosts.IP address 222.12.0.0 is assigned to organization. Find superrnet mask. **[1]**

(4) For IP address 172.60.50.2/19.Find subnet address. Find the range of assignable IP address on the subnet. **[2]**

c Consider the network shown in the figure-1. Using Dijkstra's algorithm. Compute the shortest path from *s* to all network nodes. **[6]**

Q.3(a) Explain various congestion prevention policies **[6]**

Q.3(b) Assume the following hosts are present in the local network
Host A :IP-192.192.192.100, MAC-1A-23-F9-CD-06-9B **Host B** :IP-192.192.192.101, MAC-88-B2-2F-54-1A-0F
Host C:IP-192.192.192.102, MAC-48-BD-D2-C7-56-2A **Host D**:IP-192.192.192.103, MAC-5C-66-AB-90-75-B1

(1) Suppose Host A send the ARP request to find the MAC address of the Host C and Host C sends back the ARP reply. What is the destination MAC address in ARP request packet and reply packet? **[3]**

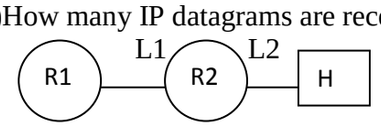
(2) Suppose Host A send the ARP request to find who owns IP address 192.192.192.103.What is the destination address in ARP request packet? Which host will give reply? What are the contents of ARP reply packet? **[3]**

-OR-

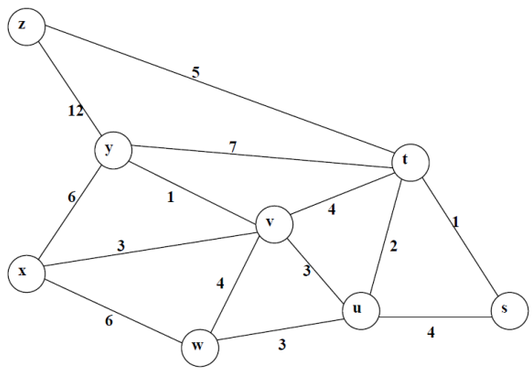
Q.3(a) The diagram below shows router R1 sending a datagram to Host H through router R2.Link L1 & L2 permits a MTU of 1500 bytes & 1100 bytes respectively (MTU: maximum transfer unit).A is an IP datagram which has size 4000 bytes (the size of datagram includes its header of 20 bytes).It is not using any of the option field in the header. A must be fragmented as it is sent from R1to H .Assume that all datagram s are received successfully.

(1)What are the sizes of IP datagram A is fragmented in sending it from R1 to R2 over L1? **[4]**

(2)How many IP datagrams are received by H? **[2]**



Q.3(b) Explain link state routing protocol in detail. **[6]**


z
y
t
v
x
u
s
w
5
12
7
6
1
4
1
3
2
3
4
6
3
4