Seat No.____

# GANPAT UNIVERSITY

**B. Tech SEMESTER-VI Computer Engineering/Information Technology**
**EXAMINATION May-June 2012**
**CE 602/IT 602: Network Protocols and Programming**

Time: 3 Hours]                                                                          [Total Marks: 70

**Instructions:**

1. Figures to the right indicate full marks
2. Each section should be written in a separate answer book
3. Be precise and to the point in your answer

## SECTION-I

**Q-1   Answer the following:**

(a)   Draw ARP package and explain Input and Output module with algorithm.   [6]

(b)   Explain ICMP Error messages in brief.   [6]

**OR**

**Q-1   Answer the following:**

(a)   Explain IP datagram in brief.   [6]

(b)   Explain ICMP Query Messages in detail.   [6]

**Q-2   Answer the following:**

(a)   What is Forwarding? Explain Next-hop and Host specific method of forwarding techniques.   [6]

(b)   What is Sub netting? If the destination address is 200.40.34.50 and the subnet mask is 255.255.240.0. then find Subnet address, number of subnet works and Number of addresses per subnet works.   [5]

**OR**

**Q-2   Answer the following:**

(a)   1) Explain Forwarding with classless Addressing.   [6]
       2) Explain static vs. dynamic routing table.

(b)   Explain ICMP Package in Brief.   [5]

**Q-3   Answer the following:**

(a)   What is Fragmentation? Explain Fragmentation in Brief with an example.   [6]

(b)   An Organization is granted the block 130.34.12.64/26. The organization needs 4 subnets. Find subnet prefix length also find subnet address and the range of addresses for each subnet   [6]

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Page 1 of 2

## SECTION-II

**Q-4 Answer the following:**

(a) Discuss link state routing protocol in brief. [6]

(b) Explain process to process communication and connection oriented service in TCP protocol. [6]

**OR**

**Q-4 Answer the following:**

(a) Explain state transition diagram of TCP connection in brief. [6]

(b) Explain process to process communication and datagram of UDP protocol. [6]

**Q-5 Answer the following:**

(a) Explain Three-Way Handshaking mechanism of TCP connection termination in detail. [6]

(b) What is IGMP? Explain types of IGMP messages and format of IGMP. [5]

**OR**

**Q-5 Answer the following:**

(a) Explain Four-Way Handshaking mechanism of TCP connection termination in detail. [6]

(b) Explain Datagram, Encapsulation and Decapsulation of UDP Protocol in brief. [5]

**Q-6 Answer the following:**

(a) Explain the terms:
1. Sequence number.
2. Acknowledgement number.
3. RTT
4. IP Header
[4]

(b) What is BGP? Why do we use BGP protocol? Explain external and internal BGP. [4]

(c) Explain Two-Node and Three-Node loop instability. [4]

**End of Paper**

Page 2 of 2