

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER– V • EXAMINATION – WINTER 2015

Subject Code: 650010

Date: 10/12/2015

Subject Name: Advance Networking

Time: 10.30 am - 01.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a) Answer the following questions 07**
- 1) Explain: Loopback Address
 - 2) Explain: Network Address
 - 3) Explain: Subnet
 - 4) Define: Supernet
 - 5) Define: Fragment Offset
 - 6) Explain: Window Advertisement
 - 7) Explain: SACK
- (b) Explain following terms in short: 07**
- 1) Address Resolution Cache
 - 2) ARP Encapsulation and Identification
 - 3) Reverse Address Resolution (RARP)
 - 4) MTU
 - 5) Header Checksum
 - 6) Pointer of Internet Datagram Option
 - 7) Host Specific Routes
- Q.2 (a) Explain three-way handshake for establishing a TCP connection. 07**
- (b) Explain Original class full Addressing scheme with example. 07**
- OR**
- (b) Write a short note on CIDR (Classless Internet Domain Routing). 07**
- Q.3 (a) Draw the block diagram of address acquisition states of DHCP client and explain each state in brief. 07**
- (b) How testing Destination Reachability and status and source quench is handled in ICMP? 07**
- OR**
- Q.3 (a) Explain data structure and algorithms used for classless lookups. Take valid examples to explain each of them. 07**
- (b) What is MIME? What are the basic types that can appear in a MIME Content-Type declaration? Explain with their meaning. Also explain MIME multipart messages with example. 07**
- Q.4 (a) Explain the format of UDP Messages and UDP Pseudo-Header. List 5 reserved and available UDP Port Numbers. 07**
- (b) Explain TCP Segment Format in detail. Explain in detail CODE BITS field of TCP Header in detail. 07**
- OR**
- Q.4 (a) Explain following terms with respect to TCP. 07**
- a) Sliding windows
 - b) Passive and Active Opens
 - c) Segments, Streams and Sequence Numbers

- (b) i) Explain SACK and ECN in detail. 04
ii) Explain RED in detail. 03
- Q.5 (a) a) Explain the working of TELNET protocol using figure. 04
b) Explain IPsec Encapsulating Security Payload. 03
- (b) Explain VPN Addressing and Routing. Also describe what is Extended VPN Technology to individual hosts. Explain what VPN offers to Private Addresses. 07
- OR**
- Q.5 (a) What is the requirement of NAT? How Table creation is done in NAT. Explain Multi-Address and Port Mapping with reference to NAT. 07
- (b) a) Explain Persistent Connection and Negotiation concepts w.r.t. HTTP. 03
b) Explain address acquisition states with respect to DHCP. 04
