

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER-V • EXAMINATION – SUMMER 2016

Subject Code: 2650010

Date: 13-05-2016

Subject Name: Advanced Networking (AN) (Elective-III)

Time: 10.30am to 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) Explain IPv4 Subnet Addressing with suitable example. 7
 - (b) Write a short note on following:
 - (i) Embedding IPv4 Addresses In IPv6 For Transition. 3
 - (ii) ARP Message Format 4
- Q.2**
- (a) Discuss IP Forwarding Algorithm. 7
 - (b) What is the purpose of ping command? Explain the ICMP message types used with IPv4 and IPv6. 7

OR

- (b) What is User Datagram Protocol (UDP) ? Explain UDP Encapsulation and Protocol Layering. 7
- Q.3**
- (a) Write a short note on following
 - (i) TCP segment format. 3
 - (ii) Random Early Detection (RED) 4
 - (b) (i) Explain the (i) Maximum Segment Size Option and (ii) Window Scaling Option of TCP Options. 4
 - (ii) Explain TCP connection Establishment. 3

OR

- (a) What is Virtual Private Networks (VPNs)? Explain VPN Addressing and Forwarding. 7
 - (b) Explain NAT Translation Table Creation in details. 7
- Q.4**
- (a) Explain following
 - (i) DHCP Message Format. 4
 - (ii) Draw and explain IPv6 Base Header Format. 3

- (b) Discuss IPv6 Neighbor Discovery Protocol (NDP) 7

OR

- (a) What is E-mail ? Explain Simple Mail Transfer Protocol (SMTP). 5

- (b) (i) Discuss Real-Time Transport Protocol (RTP). 5

- (ii) Explain IPv6 Fragmentation And Path MTU Discovery (PMTUD). 4

- Q.5** (a) What is Software Defined Networking (SDN) ? Discuss SDN Architecture And External Controllers. 7

- (b) What is IP Security (IPsec)? Explain IPsec Authentication Header in details. 7

OR

- (a) Explain following 7

- (i) Wireless Networking And IEEE 802.15.4

- (ii) Reverse Address Resolution (RARP).

- (b) Discuss ZigBee IPv6 Protocol Stack. 7
