

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER- V EXAMINATION – WINTER 2016

Subject Code: 2650010

Date: 28/11/2016

Subject Name: Advanced Networking

Time: 10.30 am 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)** Answer following. **07**
- (1) What is DODAG?
 - (2) What do you mean by symmetric NAT?
 - (3) List any two basic protocols that H.323 uses for IP Telephony.
 - (4) List range of private & public IP addresses of Class A, B & C.
 - (5) "VLAN and VPN are same thing." True/False
 - (6) List RTCP message types
 - (7) "Calculation of MTU & MSS does not have any impact on performance of TCP." True/False
- (b)** Answer following. **07**
- (1) What is SDR?
 - (2) State use of PUSH and RST code bits in IPv4.
 - (3) Give any one example where sensing, monitoring & control are required in context of IoT.
 - (4) How VLSM & CIDR differ?
 - (5) What is ASN.1 & BER?
 - (6) What do you mean by proactive and reactive in context of address resolution?
 - (7) What is WRR & DRR?
- Q.2 (a)** Attempt following.
- (1) Explain format of an ICMPv6 packet too big & ICMPv6 redirect message. **04**
 - (2) Explain ARP message format. **03**
- (b)** Do as directed.
- (1) Explain IP message format in detail. **04**
 - (2) List weaknesses in Internet addressing. **03**
- OR**
- (b)** Attempt following.
- (1) Explain Next Hop & Direct delivery forwarding in IPv4 using proper example. **04**
 - (2) Briefly explain IPv6 Processing Options during Fragmentation. **03**
- Q.3 (a)** Attempt following.
- (1) List properties of reliable delivery service & State TCP message format. **04**
 - (2) What is the role of 'Pseudo header' in UDP? State message format for the same. **03**
- (b)** Do as directed.
- (1) Explain interaction of NAT Box with ICMP & FTP. **04**
 - (2) Explain DHCP Lease concept. **03**
- OR**
- Q.3 (a)** Attempt following. **04**

- (1) 'Proper computation of discard probability' & 'global synchronization' are important issues when RED is in effect. Why? **03**
- (2) Why two 'fin-wait' states are required in TCP? Explain using proper example. **03**
- (b)** Do as directed.
- (1) Write a note on NAPT. **04**
- (2) Explain IPv6 configuration options in context of DHCP. **03**
- Q.4 (a)** Attempt following.
- (1) Explain Overlay Networks. **04**
- (2) Differentiate POP3 and IMAP. **03**
- (b)** Do as directed.
- (1) Explain six main states of a DHCP client and transitions among them. **04**
- (2) Briefly explain SIP & SDP. **03**
- OR**
- Q.4 (a)** Attempt following.
- (1) What do you mean by COPS? Explain its working in context of IntServ enforcement. **04**
- (2) What is SMI? State any 5 MIB variables with their respective meanings. **03**
- (b)** Do as directed.
- (1) List & explain MIME types. **04**
- (2) Write a note on RTP. **03**
- Q.5 (a)** Attempt following.
- (1) Write a note on SDN with its architecture. **04**
- (2) Write a note on SSL. **03**
- (b)** Do as directed.
- (1) Briefly explain Mesh Over & Route-Over approach. **04**
- (2) Define SA and SPI. List any two security algorithms which are mandatory for IPSec. **03**
- OR**
- Q.5 (a)** Attempt following.
- (1) Explain ZigBee IPv6 Protocol Stack. **04**
- (2) Briefly explain Packet and Application level Firewall. **03**
- (b)** Do as directed.
- (1) List Openflow extensions & additions and explain any two of them **04**
- (2) Explain AH & ESP message format in 'Transport' and 'Tunnel mode'. **03**
