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.

(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**

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