

Roll No.

23076

**M. Tech. 3rd Semester (Computer Engg.)
Examination – December, 2013**

SYSTEM AND NETWORK ADMINISTRATION

Paper : MTCE-705-A

Time : Three Hours]

[M.M. : 100

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complain in this regard, will be entertained after examination.

Note : Attempt any *five* questions.

1. (a) What is the essence of successful data transmission ? What are basic mediums of transmission available ? Also explain the different categories of twisted pair cabling system along with at least one application. 12
- (b) What is the difference between network layer delivery and transport layer delivery ? 8
2. (a) Differentiate between stream ciphers and block ciphers. 5
- (b) Explain the RSA algorithm in detail. Also find keys d and e for the RSA cryptosystem where $P = 7$ and $q = 11$. 15
3. (a) What is a VLAN ? When is it really required ? Can't we use subnetting instead of using VLAN ? — 10

- (b) What are the basic H/W requirements for establishing a Peer to Peer network ? Also write the steps of installation for the same. 10
4. (a) What is DNS ? What role does it play ? 5
(b) What is the connection b/w TCP/IP and ARPANET ? 5
(c) What is IPSec ? On which layer is it implemented ? Also explain the fundamental data structures used for IPSec. 10
5. Write short notes on : 20
(i) AWK
(ii) NAT
6. (a) Write the use and syntax of the following TCP/IP troubleshooting commands : 10
Ping, netstat, ipconfig, traceroute, ifconfig.
(b) Write a shell program to find the largest of two numbers entered through the keyboard. 10
7. (a) What is the need of Swap space while installing Linux ? Write the various steps followed in creating partitions in Linux. 10
(b) Write the various steps in booting the Unix OS. What role does GRUB play in the booting process. 10
8. (a) Explain the DES algorithm with flowchart explaining each step in detail. 10
(b) Explain the directory structure of windows in detail. 10