

Roll No. ....

**23076**

**M.Tech 3rd Semester (Computer  
Engg.) Examination–May, 2014**

**SYSTEM AND NETWORK ADMINISTRATION**

**Paper MTCE-705-A**

**Time : 3 hours**

**Max. Marks : 100**

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

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**Note :** Attempt any **five** questions.

1. (a) What is unicast IP address, multicast IP address and broadcast IP address ?      8
  
- (b) What is a Proxy server ? What is the need of introducing Proxy servers between the clients and the real servers ? What are the steps of setting up a proxy server ?
  
2. (a) What is the need of security ? Write the various issues pertaining to it.      8

- (b) What are Caesar ciphers ? Write the advantages and disadvantages of them. Show the cryptanalysis of a Caesar cipher by taking a suitable example. 12
3. (a) Explain the directory structure of Windows in detail. 10
- (b) What do you understand by a file system ? Differentiate between FAT and NTFS. Which one is better ? 10
4. (a) Differentiate between confusion and diffusion. 6
- (b) Explain the Data Encryption standard algorithm with flowchart explaining each step in detail. 14
5. (a) What are digital signatures ? How will the user sign a document or digest ? Which one is more secure ? Also show how digital signature provides message security, message authenticity and non-repudiation. 10
- (b) What is IPsec ? Explain the two security protocols used in IPsec. 10

6. (a) Why is a system administration important ? What are the various issues in host management ? 12
- (b) What is a Zombie Process ? Explain why shadow passwords are used ? 8
7. (a) What is the use of Vi editor ? What are the different modes of working in it ? 5
- (b) How can you improve the system's performance ? 5
- (c) Write any five administrative commands along with their syntax. 10
8. (a) (i) What are the difference between Perl Script and Shell Script ? 5
- (ii) Describe five Unix networking. Commands with syntax. 5
- (b) Write the use and the syntax of the following TCP/IP troubleshooting commands :  
Ping, tracert, ipconfig, ifconfig, netstat.