M.Sc. DEGREE EXAMINATION, NOVEMBER 2023
INFORMATION TECHNOLOGY
THIRD SEMESTER

COURSE   : MAJOR CORE
PAPER   : NETWORK MANAGEMENT AND ADMINISTRATION
SUBJECT CODE: 19CS/PC/NA34
TIME   : 3 HOURS   MAX. MARKS: 100

SECTION – A

Answer all the following: (10 * 2 = 20)

1. What are the benefits of networking in a computer environment?
2. What is the primary purpose of an Ethernet address in a computer network?
3. List out some of the commands for managing users.
4. What is meant by Sticky bit?
5. What is Subnetting in TCP/IP networking, and why is it used?
6. What is the purpose of the echo command in shell scripting, and how is it used?
7. What is the primary difference between Telnet and Secure Shell (SSH) in remote access?
8. What is the purpose of the init process during system initialization?
9. What are the three categories of NAT?
10. What is the significance of DHCP lease management, and why is it important for network administration?

SECTION – B

Answer any SIX from the following: (6 * 5 = 30)

11. Describe the differences between LAN, MAN, and WAN networks in terms of their geographical coverage and provide an example of each.
12. Describe the roles and responsibilities of core system services. Explain how each service contributes to the overall functionality and management of a Linux system.
13. How ARP works? What are the basic steps of ARP?
14. Describe the roles and responsibilities of both DHCP servers and DHCP clients.
15. Differentiate Active FTP and Passive FTP
16. Describe the steps involved in the typical boot process of a computer.
17. Discuss about the Decision making statements in shell scripting.
18. Explain the concept of file access permissions in a Linux system. Describe the meaning and purpose of the read, write, and execute permissions for files and directories.

SECTION – C

Answer any FIVE from the following: (5 * 10 = 50)

19. Explain the addressing mechanisms used in computer networks. Discuss their roles and how they are assigned.
20. What is meant by Volume Management? Explain about creating a partition, Physical volume and Logical volume.
21. Discuss the layers of TCP/IP model with a neat diagram.

22. Compare and contrast public key authentication and password-based authentication in the context of Secure Shell (SSH). Discuss the advantages and disadvantages of each method and the steps involved in setting up public key authentication.
23. Elaborate the SSH client program in open SSH and explain how secure tunnel can be created with a neat diagram.
24. Discuss the process of configuring and starting an FTP server using vsftpd. Include steps for securing the server and testing its functionality.
25. Discuss about configuring and working of Netfilter.

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