Reg. No ..... Name **25U634**

END SEMESTER EXAMINATION - MARCH 2025

SEMESTER 6 : INTEGRATED M.Sc. PROGRAMME COMPUTER SCIENCE - DATA SCIENCE

COURSE : **21UP6CRMCP19 : COMPUTER NETWORKS**

(For Regular 2022 Admission and Supplementary 2021 Admission)

Time : Three Hours Max. Weightage: 30

PART A

Answer any 8 Questions

1. Illustrate the structure of a fibre optic cable.
2. Examine how statistical TDM is better from synchronous TDM.
3. Define what a digital signal is and how it differs from an analog signal.
4. Define supernetting.
5. List the advantages of firewalls.
6. Explain the concept of byte stuffing.
7. Define redundancy.
8. _____ describes a weakness in a system that could be exploited by a threat.
9. Discuss the role of a gateway in networking.
10. Define the term "throughput" in the context of data communication.

(1 x 8 = 8 Weight)

PART B

Answer any 6 Questions

11. Describe the encryption process in a simple substitution cipher.
12. Examine the risks associated with outdated software and unpatched systems in the context of network security.
13. Explain the characteristics of twisted pair cables and their applications.
14. Explain the use of UDP in the Transport layer.
15. Summarize the functions of the Presentation layer in data translation and encryption.
16. Define guided media in the context of communication networks.
17. Prepare a short note on the key differences between IPv6 and IPv4 addressing.
18. Explain the taxonomy of protocols.

(2 x 6 = 12 Weight)

PART C

Answer any 2 Questions

19. Investigate the role of phishing attacks in compromising network security, discussing the techniques employed by attackers and strategies for user awareness and education.
20. Discuss the concept of address classes in IPv4, including Class A, B, and C addresses. Explain how classful addressing influenced IPv4 address assignments and routing.
21. Explain how FDM allows multiple signals to be transmitted simultaneously over a shared medium.
22. Explore the layered architecture of the TCP/IP model. Discuss how the model organizes protocols into layers and the responsibilities of each layer in the communication process.

(5 x 2 = 10 Weight)