

A-0841

Total Pages : 4

Roll No.

MCA-E10/MCS-E10

WIRELESS NETWORKS

(MCA)

Examination, June 2025

Time : 2:00 Hrs.

Max. Marks : 70

Note :- This paper is of Seventy (70) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given therein. *Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.*

Section-A

Long Answer Type Questions 2×19=38

Note :- Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

1. Explain the concept of polarization in the context of electromagnetic waves. How does polarization affect the transmission and reception of radio signals, especially in communication systems ?
2. Explain the concepts of multiplexing and duplexing in telecommunications. Discuss the different types of multiplexing techniques and duplexing methods. How do these methods improve the efficiency of communication systems ?
3. Explain the role of spectrum management in telecommunications. Discuss how spectrum allocation and licensing are regulated. What are the challenges involved in spectrum management, and how do regulatory bodies ensure its efficient use ?
4. Explain the basic concept of networking. Discuss the importance of networking in modern communication systems, including its role in facilitating data exchange, resource sharing, and interconnectivity between different devices.
5. Discuss the 802.1X standard and its role in securing wireless networks. Explain how 802.1X facilitates authentication and access control, and describe its importance in enterprise networks.

Section–B

Short Answer Type Questions 4×8=32

Note :– Section ‘B’ contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. Explain the characteristics of a wave. How do these characteristics impact the propagation of radio waves ?
2. Explain, the roles of the Telecom Regulatory Authority of India (TRAI) in managing telecom licensing ?
3. Describe the TCP/IP model and compare it with the OSI model. How is the TCP/IP model more practical for real-world internet communications than the OSI model ?
4. Explain the concept of multi-hop relaying in mesh networks. How does the use of multi-hop routes impact the bandwidth and overall performance of a mesh network ?
5. Explain the key methods for protecting a wireless network from unauthorized access and security threats.
6. Discuss the process of estimating the capacity of a wireless network. How do factors like bandwidth, signal strength, and interference affect capacity

7. Explain the process of configuring an Access Point (AP) for a wireless network. What are the key configuration settings that need to be adjusted for optimal performance ?
8. Discuss the importance of regular maintenance and monitoring in ensuring the long-term reliability and performance of wireless networks.
