



**B.E./B.TECH DEGREE EXAMINATIONS: APRIL / MAY 2023**

(Regulation 2018)

Fourth Semester

**COMMON TO ALL BRANCHES**

U18CSR4222: CCNA Switching, Routing & Wireless Essentials

**COURSE OUTCOMES**

- CO1:** Understand key switching and routing concepts.  
**CO2:** Ability to perform basic network configuration and troubleshooting.  
**CO3:** Ability to identify and mitigate LAN security threats.  
**CO4:** Understand the WLAN functionality.  
**CO5:** Ability to configure basic WLAN security.

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 2 = 20 Marks)**

**(Answer not more than 40 words)**

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|--|-----|-------------------|
| 1. Discuss the advantages of Auto-MDIX configuration.                    | CO1 | [K <sub>2</sub> ] |
| 2. Differentiate store and forward and cut through switching             | CO1 | [K <sub>2</sub> ] |
| 3. Discuss about the types of VLAN.                                      | CO2 | [K <sub>2</sub> ] |
| 4. Mention three inter-VLAN routing options available.                   | CO2 | [K <sub>2</sub> ] |
| 5. Explain about Router solicitation and Router advertisement of DHCPv6. | CO3 | [K <sub>2</sub> ] |
| 6. Explain the need of SLAAC protocol.                                   | CO3 | [K <sub>2</sub> ] |
| 7. Discuss about channel Management in WLAN.                             | CO4 | [K <sub>2</sub> ] |
| 8. Discuss about the threats in WLAN.                                    | CO4 | [K <sub>2</sub> ] |
| 9. Discuss about Routing table principles                                | CO5 | [K <sub>2</sub> ] |
| 10. Differentiate static and dynamic Routing.                            | CO5 | [K <sub>2</sub> ] |

**Answer any FIVE Questions:-**

**PART B (5 x 4 = 20 Marks)**

**(Answer not more than 80 words)**

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|--|-----|-------------------|
| 11. Mention the common Inter-VLAN issues and how to fix and verify the same.   | CO1 | [K <sub>2</sub> ] |
| 12. Discuss about the common issues of EtherChannel and their troubleshooting. | CO2 | [K <sub>2</sub> ] |
| 13. Discuss about switch attack categories and its mitigation techniques.      | CO3 | [K <sub>2</sub> ] |
| 14. Discuss about the various components of WLAN.                              | CO4 | [K <sub>2</sub> ] |

15. Discuss about CAPWAP operations on WLAN. CO4 [K<sub>2</sub>]
16. Discuss about path determination in Routing concepts. CO5 [K<sub>2</sub>]

**Answer any FIVE Questions:-**  
**PART C (5 x 12 = 60 Marks)**  
**(Answer not more than 300 words)**

17. a) Demonstrate basic switch configuration commands with an example. 6 CO1 [K<sub>3</sub>]  
b) Demonstrate the basic router configuration with suitable commands 6 CO1 [K<sub>3</sub>]
18. a) Apply the algorithm of spanning tree protocol with an example. 6 CO2 [K<sub>3</sub>]  
b) Discuss the evolution of STP. 6 CO2 [K<sub>2</sub>]
19. a) Demonstrate the steps for Configuring DHCPv4 Server. 6 CO3 [K<sub>3</sub>]  
b) Discuss about the purpose of SLAAC and demonstrate how can it be enabled. 6 CO3 [K<sub>2</sub>]
20. a) Elaborate the steps of DHCPv6 operations. 6 CO3 [K<sub>2</sub>]  
b) Discuss about the operations of WLAN. 6 CO4 [K<sub>2</sub>]
21. a) Discuss about the operations to configure WLAN on WLC. 6 CO4 [K<sub>2</sub>]  
b) Discuss about packet forwarding process in Routing. 6 CO5 [K<sub>2</sub>]
22. a) Demonstrate the steps for configuring static routes. 6 CO5 [K<sub>3</sub>]  
b) Demonstrate the troubleshooting methods for IPv4 static and default route configuration. 6 CO5 [K<sub>3</sub>]

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