



B.E/B.TECH DEGREE EXAMINATIONS: APRIL / MAY 2024

(Regulation 2018)

Fourth Semester

COMMON TO ALL BRANCHES

U18CSR4222: CCNA – Switching, Routing and 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. Differentiate between Telnet and Secure Shell. | CO1 | [K ₂] |
| 2. Explain about Auto-MDIX. | CO1 | [K ₂] |
| 3. What are the functionalities of a trunk link in a switched network? | CO2 | [K ₁] |
| 4. List the various inter-VLAN routing options available for a VLAN implementation. | CO2 | [K ₁] |
| 5. What is a broadcast storm and how can it be avoided in switched network? | CO3 | [K ₂] |
| 6. What is etherchannel? What is its significance? | CO3 | [K ₂] |
| 7. List the steps in the IPv4 address renewal process in DHCPv4 protocol | CO4 | [K ₁] |
| 8. What are the various parts of an IPv6 GUA? Give an example | CO4 | [K ₂] |
| 9. Enumerate the security devices used to protect the network perimeter. | CO5 | [K ₁] |
| 10. List the types of wireless networks. | CO5 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 4 = 20 Marks)

(Answer not more than 80 words)

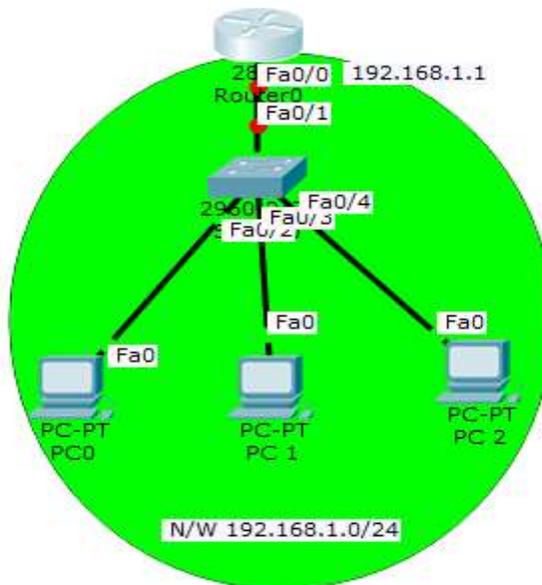
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|--|-----|-------------------|
| 11. List and explain about ANY four LED indicators present in a configurable switch | CO1 | [K ₂] |
| 12. Describe about the various types of VLANS that can be implemented in a switch. | CO2 | [K ₂] |
| 13. Explain about the various steps of the spanning tree protocol operation to build a loop free | CO3 | [K ₂] |

topology.

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|-----|--|-----|-------------------|
| 14. | What is DHCP relay? How is it implemented in the IPv4 & IPv6 networks? | CO4 | [K ₂] |
| 15. | Differentiate between static and dynamic routing. | CO5 | [K ₂] |
| 16. | Explain about the various entries found in a routing table | CO5 | [K ₂] |

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

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|-----|--|---|-----|-------------------|
| 17. | a) Explain in detail the steps in switch boot sequence | 6 | CO1 | [K ₂] |
| | b) Discuss about the various switch forwarding methods | 6 | CO1 | [K ₂] |
| 18. | a) Enumerate and explain the various states of the ports of a switch during the STP operation. | 6 | CO2 | [K ₂] |
| | b) Explain the operation of the Port Aggregation Protocol. | 6 | CO2 | [K ₃] |
| 19. | a) Configure DHCPv4 server in router R1 shown in the exhibit below : | 6 | CO3 | [K ₃] |



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|-----|---|---|-----|-------------------|
| | b) What is FHRP? How is it implemented in an enterprise network? | 6 | CO3 | [K ₂] |
| 20. | a) Discuss in detail about the various methods of GUA assignment with examples. | 6 | CO4 | [K ₂] |

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|--------|---|---|-----|-------------------|
| b) | Explain about any 3 LAN attacks. | 6 | CO4 | [K ₂] |
| 21. a) | What are the three ways a switch can be configured to learn MAC address on secure port? | 6 | CO4 | [K ₂] |
| b) | Discuss about the various wireless technologies. | 6 | CO5 | [K ₂] |
| 22. a) | Explain how packet forwarding done in a network of routers? | 6 | CO5 | [K ₂] |
| b) | Write short notes on the various components that are present on a typical WLAN | 6 | CO5 | [K ₂] |
