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BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – M.Sc.(ANCS)-2025

Course Name – Enterprise Routing and Switching Technique

Course Code - MNC20407

(Semester II)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

(i) State the default administrative distance of internal EIGRP routes.

- | | |
|--------|--------|
| a) 90 | b) 100 |
| c) 110 | d) 120 |

(ii) Select the authentication methods supported by EIGRP.

- | | |
|--------------|--------------|
| a) SHA & AES | b) MD5 & SHA |
| c) DES & AES | d) MD4 & SHA |

(iii) Assess the most commonly used tool for EIGRP route filtering.

- | | |
|--------|----------------|
| a) ACL | b) Prefix-list |
| c) NAT | d) VLAN map |

(iv) Select the table that contains only the best routes selected by DUAL.

- | | |
|-------------------|-------------------|
| a) Neighbor table | b) Topology table |
| c) Routing table | d) ARP table |

(v) Assess the default hello interval used on high-speed links.

- | | |
|-----------|-----------|
| a) 1 sec | b) 5 sec |
| c) 10 sec | d) 30 sec |

(vi) Identify the network scope within which OSPF maintains a complete view.

- | | |
|---------|-----------|
| a) AS | b) VLAN |
| c) Area | d) Subnet |

(vii) Identify the router that injects external routes into OSPF.

- | | |
|--------------------|---------|
| a) DR | b) ABR |
| c) Internal Router | d) ASBR |

(viii) Choose the LSA type generated only when a DR exists.

- | | |
|-----------|-----------|
| a) Type 1 | b) Type 2 |
| c) Type 3 | d) Type 4 |

(ix) Identify the metric used by RIPv2.

- a) Cost
- b) Bandwidth
- c) Hop count
- d) Delay
- (x) Identify the security weakness associated with default MAC learning.
 - a) High latency
 - b) MAC spoofing
 - c) Low bandwidth
 - d) Routing loop
- (xi) Identify the port mode required for effective Port Security operation.
 - a) Trunk
 - b) Access
 - c) Routed
 - d) Monitor
- (xii) Classify the violation mode that generates syslog messages during a Port Security breach.
 - a) Protect
 - b) Restrict
 - c) Shutdown
 - d) None
- (xiii) Choose the MPLS mode commonly implemented in modern networks.
 - a) Cell mode
 - b) Frame mode
 - c) ATM mode
 - d) Token
- (xiv) Assess the function of the outer label in an MPLS VPN environment.
 - a) VPN
 - b) Customer routing
 - c) Transport to PE
 - d) MAC mapping
- (xv) Recommend the primary objective achieved through MPLS Traffic Engineering.
 - a) Increase MAC table size
 - b) Reduce routing protocols
 - c) Avoid congestion
 - d) Block traffic

Group-B

(Short Answer Type Questions)

3 x 5=15

- 2. Explain the working principle of EIGRP in brief. (3)
- 3. Describe any three enterprise grade features of OSPF. (3)
- 4. Describe any three major concerns associated with route redistribution. (3)
- 5. Analyze the need for EtherChannel in networks operating with Spanning Tree Protocol. (3)
- 6. Evaluate default MAC learning as a potential security weakness in switched networks. (3)

OR

- Justify the need for VRF in MPLS VPN environments. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

- 7. Explain the concept of fast convergence in EIGRP with reference to scalability and efficiency. (5)
- 8. Define VLAN and explain its significance in enterprise networks. (5)
- 9. Analyze the working of VTP advertisements with respect to their different types. (5)
- 10. Differentiate EtherChannel operation at different OSI layers. (5)
- 11. Judge the relationship between EtherChannel and Spanning Tree Protocol in preventing link blocking. (5)
- 12. Evaluate Port Security violation modes based on their effects on switch ports. (5)

OR

- Justify the role of CE, PE and P routers in MPLS VPN architecture. (5)

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