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BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – B.Sc.(ANCS)-Hons-2023
Course Name – Network Security Essentials
Course Code - BNC50114
(Semester V)

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) Predict the command used to display CDP information on a Cisco router.
a) show cdp neighbors
b) cdp run
c) show interface
d) show ip route

(ii) Choose the command that enables NTP on a Cisco router.
a) ip ntp enable
b) ntp server x.x.x.x
c) enable ntp-server
d) time sync enable

(iii) What is the purpose of the service password-encryption command in Cisco devices?
a) To enforce strong password rules
b) To encrypt all passwords in the running configuration
c) To block repeated login attempts
d) To enable two-factor authentication

(iv) Identify the ACL type that can filter traffic by both source and destination.
a) Distributed List
b) Prefix List
c) Route Map
d) Extended ACL

(v) Choose the correct possibility if no ACL rule matches the traffic.
a) Packet is encrypted
b) Traffic is routed
c) Default deny applies
d) Firewall alerts

(vi) Identify the correct option from the following which can filter routing protocol updates.
a) IP SLA
b) Access Point
c) Distributed List
d) OSPF Priority

(vii) Choose is the purpose of NAT.
a) Increase routing speed
b) Block unwanted users
c) Encrypt packets
d) Translate private to public IPs

(viii) Identify command applies a route-map to an interface.
a) ip nat inside
b) route map set
c) ip policy route-map
d) ip access-group

(ix) Indicate the command to define a NAT pool.

a) nat create pool
b) ip nat pool
c) define nat pool
d) pool ip nat

(x) Choose the primary goal of VPN tunneling.

a) To increase bandwidth
b) To encapsulate data securely
c) To perform routing
d) To block firewalls

(xi) Choose the tunneling protocol used in IPv6 transition.

a) IP-in-IP
b) BGP
c) DNS
d) DHCP

(xii) Identify the IPv6 transition method that does not use tunneling.

a) Dual stack
b) 6to4
c) ISATAP
d) Teredo

(xiii) Predict the correct expansion of BPDU in the context of Spanning Tree Protocol.

a) Basic Packet Distribution Unit
b) Bridge Protocol Data Unit
c) Broadband Packet Data Uplink
d) Broadcast Protocol Data Update

(xiv) Choose the primary role of DHCP snooping.

a) To monitor and filter DHCP messages to prevent rogue DHCP servers.
b) To assign IP addresses dynamically to network devices.
c) To encrypt DHCP communication.
d) To provide a backup for DHCP servers.

(xv) Select the functions of SPAN and RSPAN.

a) SPAN monitors traffic on local switch ports, while RSPAN extends monitoring to remote switches over multiple network devices.
b) SPAN provides a mirrored copy of traffic, while RSPAN only summarizes traffic statistics.
c) SPAN is used for Layer 3 monitoring, while RSPAN is for Layer 2.
d) SPAN requires a dedicated monitoring device, while RSPAN does not.

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Define packet filtering in networking. (3)
3. Distinguish between Static NAT and Dynamic NAT. (3)
4. Describe the role of tunnelling in IPv6 migration. (3)
5. Write a note on Dynamic ARP Inspection (DAI) effectiveness. (3)
6. Justify the need for Route Maps in routing control. (3)

OR

Justify the use of Prefix Lists over ACLs. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Differentiate between backup and restore procedures in IOS management. (5)
8. Evaluate the role of centralized AAA servers in managing network access. (5)
9. Justify the need for PBR in enforcing organizational routing policies. (5)
10. Explain the purpose of IPv6-ready firewalls in enterprise networks. (5)
11. Compare the effectiveness of DHCP snooping and port security in attack prevention. (5)
12. Distinguish between the routing behavior of Anycast and Unicast in IPv6. (5)

OR

Evaluate the role of dual threats in IPv6 transition scenarios. (5)

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