BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – M.Sc.(ANCS)-2022
Course Name – Switching Professional
Course Code - MNCS401
(Semester IV)

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) Identify the transmission medium that provides the highest transmission speed in a network.

   a) Coaxial cable   b) Twisted pair cable
   c) Optical fiber   d) Electrical cable

(ii) Identify the medium through which the wireless signal can move.

   a) Radio waves   b) Microwaves
   c) Infrared   d) All of the mentioned

(iii) Select the answer that best describes multilayer switching with CEF.

   a) The first packet is routed and then the flow   b) The switch supervisor CPU forwards each
      is cached   packet.
   c) The switching hardware learns station   d) A single database of routing information is
      addresses and builds a routing database.   built for the switching hardware.

(iv) Determine the information that is used to forward frames in a Layer 2 switch.

   a) Source MAC address   b) Destination MAC address
   c) Source switch port   d) IP addresses

(v) Choose the appropriate option. If a switch port is in an errdisable state, what is the first thing you should do?

   a) Reload the switch   b) Use the clear errdisable port command.
   c) Use the shut and no shut interface-   d) Determine the cause of the problem.
      configuration commands.

(vi) Assume that you have just entered the configure terminal command. You want to configure the speed and duplex of the first 10/100/1000 twisted-pair Ethernet interface on the first Cisco Catalyst switch stack member to 1-Gbps full-duplex mode. Which commands should you select and enter first?

   a) speed 1000 mbps   b) speed 1000
   c) interface gigabitethernet 1/0/1   d) interface gigabit ethernet 1/0/1

(vii) Determine which of the following commands can enable STP Loop Guard on a switch port.

a) spanning-tree loop guard
b) spanning-tree guard loop
c) spanning-tree loop guard
d) spanning-tree loopguard enable

(viii) Choose which of these is the single most important design decision to be made in a network running STP.

a) Removing any redundant links
b) Making sure all switches run the same version of IEEE 802.1D
c) Root bridge placement
d) Making sure all switches have redundant links

(ix) Select which of the following is not a function of the network layer.

a) routing
b) inter-networking
c) congestion control
d) error control

(x) Predicting a 4-byte IP address is the combination of _____.

a) only network address
b) only host address
c) network address & host address
d) network address & MAC address

(xi) Identify the layer of the OSI model that switches use to provide VLAN connectivity.

a) Layer 1
b) Layer 2
c) Layer 3
d) Layer 4

(xii) Predict the number of different VLANs that an 802.1Q trunk can support.

a) 256
b) 1024
c) 4096
d) 32768

(xiii) Select the command that configures a switch port to form a trunk without using negotiation.

a) switchport mode trunk
b) switchport mode trunk nonegotiate
c) switchport mode dynamic auto
d) switchport mode dynamic desirable

(xiv) Identify the command that configures an IP phone to use VLAN 9 for voice traffic.

a) switchport voice vlan 9
b) switchport voice-vlan 9
c) switchport voice 9
d) switchport voip 9

(xv) Categorize the engineers who use VLAN for multiple reasons.

a) Software
b) Network
c) Telecommunication
d) None of these

Group-B
(Short Answer Type Questions)

3 x 5=15

2. Explain what the key advantage of using switches is. (3)
3. Explain the working principle of the Spanning Tree Protocol. (3)
4. Explain the different types of BPDU. (3)
5. What are the modes composed in the static/manual EtherChannel? (3)
6. Explain how VLAN reduces broadcast traffic. (3)

OR

Explain the different types of frame tagging in VLAN. (3)

Group-C
(Long Answer Type Questions)

5 x 6=30

7. Define the Mac Address Table. (5)
8. Write down the short notes on Bridge ID and Root Port. (5)
9. Explain the path cost or Spanning Tree path cost value. (5)
10. Evaluate the destination Mac address used by Bridge Protocol Data Units (BPDUs) in Spanning Tree Protocol (STP). (5)

11. Explain the Native VLAN with a proper example. (5)
12. Explain the brief concept of DTP. (5)

OR

Explain what is meant by "router on a stick." (5)

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