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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL - 2025

NETWORK SWITCHING TECHNOLOGIES

[Maximum marks: 75] [Time: 3 Hours]

PART A

I. Answer all the following questions in one word or one sentence. Each question carries 1 mark.

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	What is subnetting?	M1.01	R
2	Expand CIDR.	M1.02	R
3	List two primary modes in IOS.	M2.01	R
4	The …… command is an IOS command that is used to enter global configuration mode.	M2.02	R
5	List any two common types of router/switch interfaces.	M2.04	R
6	List any two switching services.	M3.01	R
7	Define VLAN.	M3.04	R
8	A …….. is a network security device that monitors and controls incoming and outgoing network traffic based on predefined security rules.	M4.01	R
9	…….. Access Lists (ACLs) use only the source IP address in an IP packet as the condition test.	M4.02	R

PART B

II. Answer any eight questions from the following. Each question carries 3 marks.

(8 x 3 = 24 Marks)

		Module outcome	Cognitive level
1	Recall the troubleshooting steps in IP Addressing with a short note for each step.	M1.07	R
2	What are the advantages of VLSM over FLSM?	M1.06	R
3	What is a subnet mask?	M1.01	R
4	Illustrate the use of “hostname” command with the help of syntax and example.	M2.03	U
5	Interpret view, save and erase configurations in a router/switch.	M2.05	U

6	Tell any three features of Port Security.	M3.02	R
7	Explain access port in VLAN.	M3.04	U
8	Explain Perimeter Router, Firewall and Internal Router.	M4.01	U
9	What are Standard access lists and Extended access lists?	M4.02	R
10	What is NAT?	M4.03	R

PART C

Answer all questions. Each question carries seven marks.

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	You are provided with a **Class C** IP address block of **192.168.3.0/24**. Develop a subnetting scheme to create **five** equal-sized subnets.	M1.03	A
	OR		
IV	You are provided with a **Class B** IP address block of **172.16.0.0/16**. Develop a subnetting scheme to create **four** equal-sized subnets.	M1.04	A
V	Explain the steps to configure DHCP in a switch/router with necessary commands.	M2.08	U
	OR		
VI	Interpret "enable password" and "enable secret" commands.	M2.03	U
VII	Explain the steps to configure Telnet in a router/switch with necessary commands.	M2.09	U
	OR		
VIII	Summarize how to check network connectivity using 'ping' and 'traceroute' commands.	M2.11	U
IX	Explain the step-by-step processes of address learning in layer 2 switch.	M3.01	U
	OR		
X	Outline the three different ways to enable routing between VLANs.	M3.05	U
XI	Make use of required IOS commands and do basic initial configuration of a network switch with an example.	M3.03	A
	OR		
XII	Illustrate STP operations with diagram.	M3.09	U
XIII	Explain Standard Access List and its configuration steps.	M4.02	U
	OR		
XIV	Make use of Dynamic NAT and configure dynamic NAT on a Cisco router.	M4.05	A

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