UNIVERSITY COLLEGE TATI (UC TATI)

FINAL EXAMINATION QUESTION BOOKLET	
COURSE CODE	: BNS 2023
COURSE	: ROUTING & SWITCHING
SEMESTER/SESSION	: 2-2024/2025
DURATION	: 3 HOURS

Instructions:

1. This booklet contains 5 questions. Answer ALL questions.

3. All answers should be written in answer booklet.

4. Write legibly and draw sketches wherever required.

5. If in doubt, raise your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 9 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

a) Based information given in Figure 1, configure Inter VLAN Routing and using multilayer switch. Assuming IP Routing already enable on the multilayer switch.

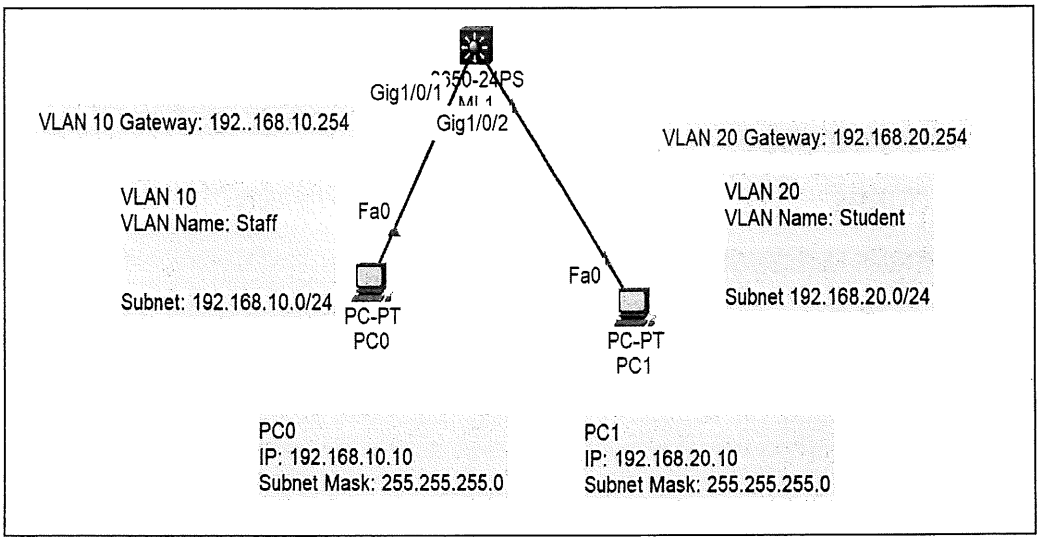

Figure 1

(8 marks)

b) Based on Figure 2 and Table 1, identify Spanning Tree Protocol (STP) port role name to their appropriate switch port in the topology. (8 marks)

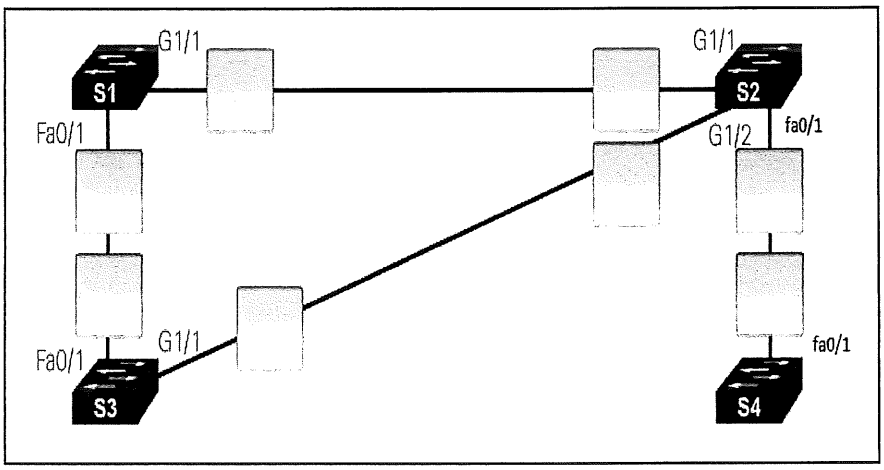

Figure 2

Table 1

	Priority	MAC Address
S1	32769	000A00111111
S2	24577	000A00222222
S3	32769	000A00333333
S4	32769	000A00444444

c) List **THREE (3)** types of Spanning Tree Protocol (STP). (3 marks)

d) Explain **THREE (3)** consideration when implement redundancy. (6 marks)

QUESTION 2

a) Give **FOUR (4)** differences between Normal Range VLAN and Extended Range VLAN (8 marks)

b) Answer all question based Figure 3 below.

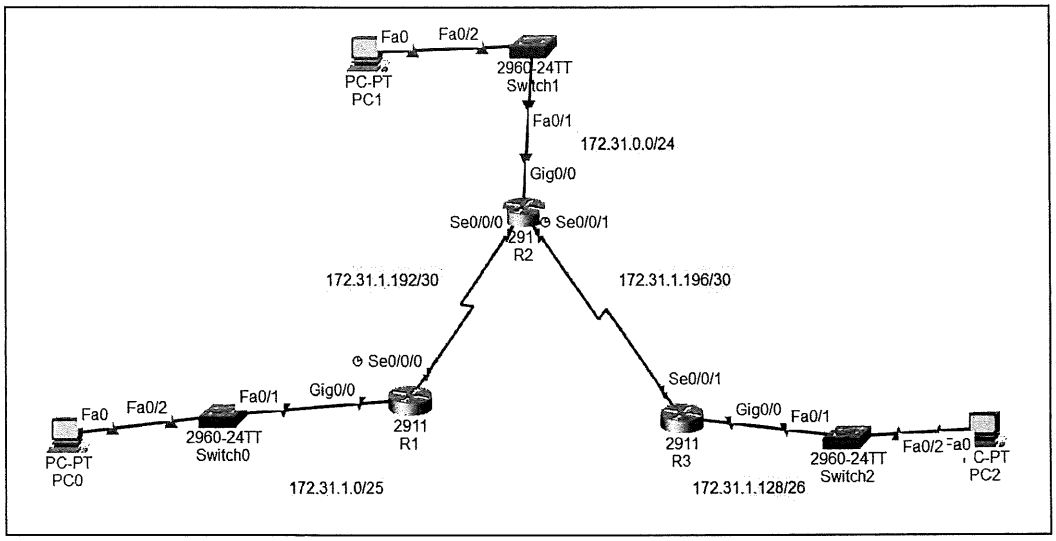

Figure 3

i) How many remote networks by R1 dan R3? (2 marks)

ii) Configure a fully specified static route for R1. (6 marks)

iii) Configure a directly connected static route from R3. (6 marks)

c) State **THREE (3)** types of static route. (3 marks)

QUESTION 3

a) Give **TWO (2)** examples for each Link State and Distance Vector Routing Protocol. (4 marks)

b) Describe **FOUR (4)** advantages of using Link State Routing Protocol. (8 marks)

c) Configure RIP routing protocol on R2 based figure 4 below. (5 marks)

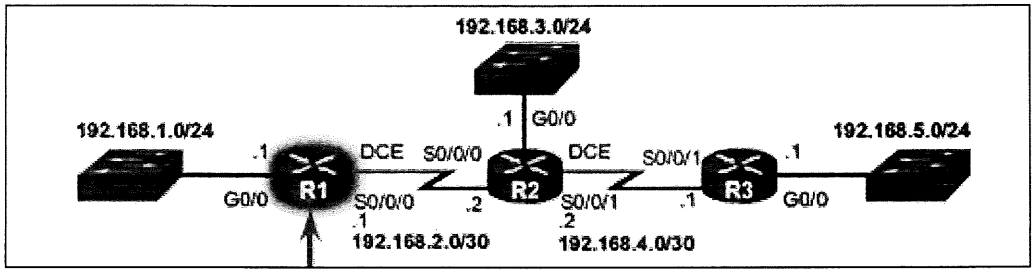

Figure 4

QUESTION 4

a) Figure 5 is the network topology that using OSPF routing protocol and OSPF process id 10. Using right command, execute OSPF routing protocol single area for Router 2. (8 marks)

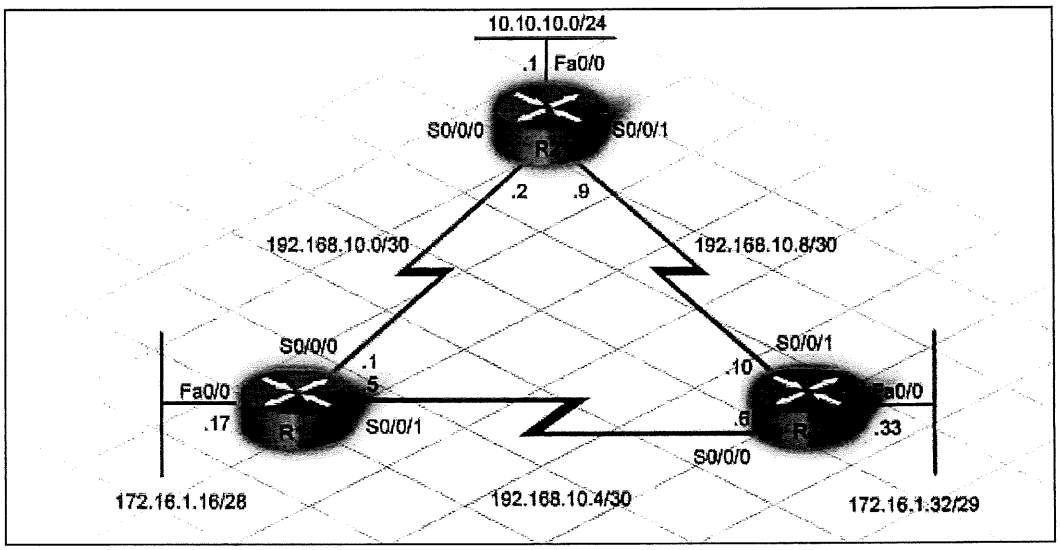

Figure 5

b) Based on Figure 6 and Table 2, configure EIGRP routing protocol for R3. (8 marks)

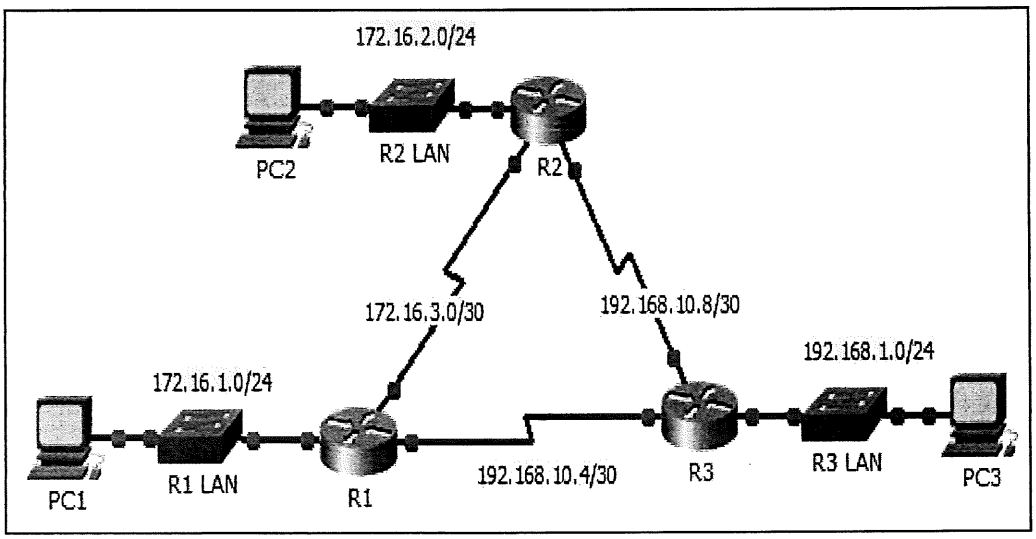

Figure 6

Table 2

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	G0/0	172.16.1.1	255.255.255.0	N/A
	S0/0/0	172.16.3.1	255.255.255.252	N/A
	S0/0/1	192.168.10.5	255.255.255.252	N/A
R2	G0/0	172.16.2.1	255.255.255.0	N/A
	S0/0/0	172.16.3.2	255.255.255.252	N/A
	S0/0/1	192.168.10.9	255.255.255.252	N/A
R3	G0/0	192.168.1.1	255.255.255.0	N/A
	S0/0/0	192.168.10.6	255.255.255.252	N/A
	S0/0/1	192.168.10.10	255.255.255.252	N/A
PC1	NIC	172.16.1.10	255.255.255.0	172.16.1.1
PC2	NIC	172.16.2.10	255.255.255.0	172.16.2.1
PC3	NIC	192.168.1.10	255.255.255.0	192.168.1.1

QUESTION 5

a) Based on Figure 7 and Table 3, create a standard numbered ACL on R3 that allows traffic from all hosts on the 192.168.10.0/24 network and all hosts on the 192.168.20.0/24 network to access all hosts on the 192.168.30.0/24 network.

(9 marks)

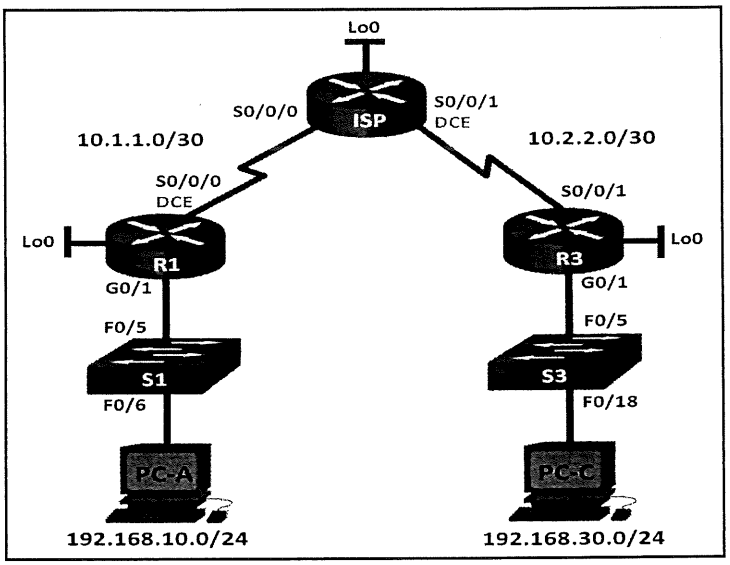

Figure 7

Table 3

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	G0/1	192.168.10.1	255.255.255.0	N/A
	Lo0	192.168.20.1	255.255.255.0	N/A
	S0/0/0 (DCE)	10.1.1.1	255.255.255.252	N/A
ISP	S0/0/0	10.1.1.2	255.255.255.252	N/A
	S0/0/1 (DCE)	10.2.2.2	255.255.255.252	N/A
	Lo0	209.165.200.225	255.255.255.224	N/A
R3	G0/1	192.168.30.1	255.255.255.0	N/A
	Lo0	192.168.40.1	255.255.255.0	N/A
	S0/0/1	10.2.2.1	255.255.255.252	N/A
S1	VLAN 1	192.168.10.11	255.255.255.0	192.168.10.1
S3	VLAN 1	192.168.30.11	255.255.255.0	192.168.30.1
PC-A	NIC	192.168.10.3	255.255.255.0	192.168.10.1
PC-C	NIC	192.168.30.3	255.255.255.0	192.168.30.1

b) Explain **FOUR (4)** best practices guideline for creation of Access Control List (ACL). (8 marks)

----------End of question----------