



UNIVERSITY COLLEGE TATI (UCTATI)

FINAL EXAMINATION QUESTION BOOKLET

COURSE CODE	: BNS 2023
COURSE	: ROUTING & SWITCHING
SEMESTER/SESSION	: 1-2022/2023
DURATION	: 3 HOURS

Instructions:

1. This booklet contains **5** questions. Answer **ALL** questions.
2. All answers should be written in answer booklet.
3. Write legibly and draw sketches wherever required.
4. 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 7 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

- a) Give **TWO (2)** features of VLAN 1 by default in cisco switch. (2 marks)
- b) Briefly explain about VLAN Trunk. (6 marks)
- c) Configure Router-On-Stick Inter-VLAN Routing on R1 based Figure 1 below.

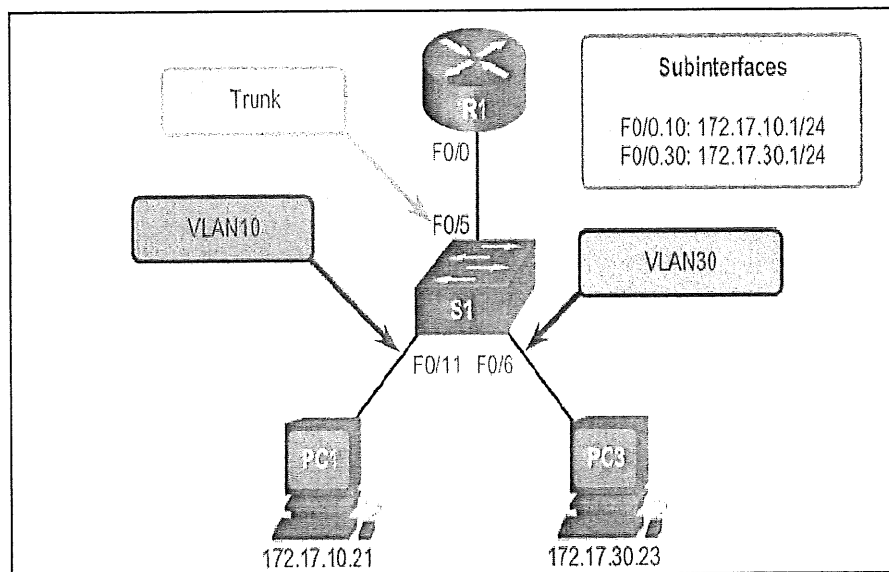


Figure 1: Router-On-Stick Inter-VLAN Routing

(8 marks)

QUESTION 2

- a) 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)

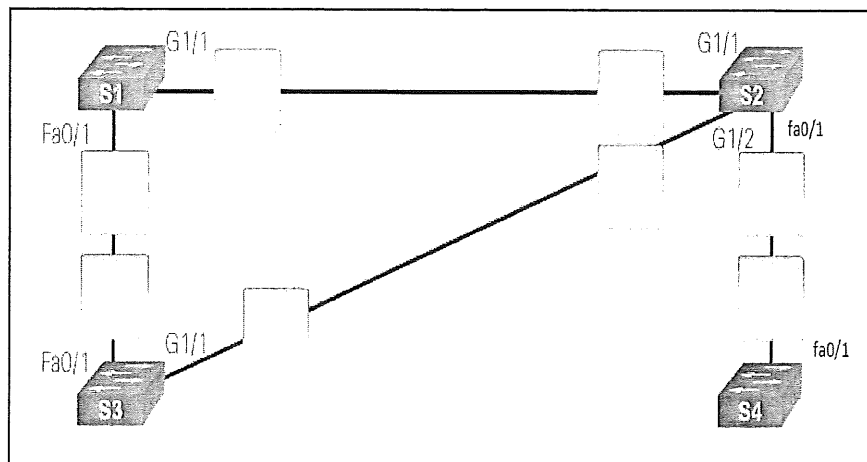


Figure 2: Spanning Tree Protocol

Table 1: Switch Priority Number

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

- b) Provide **THREE (3)** advantages of using multiple cable paths between switches. (3 marks)
- c) Explain **THREE (3)** considerations when implementing redundancy. (6 marks)
- d) Give **TWO (2)** reasons passive interface command needed in RIP configuration. (2 marks)

QUESTION 3

a) Answer all questions based Figure 3 and Table 2 below.

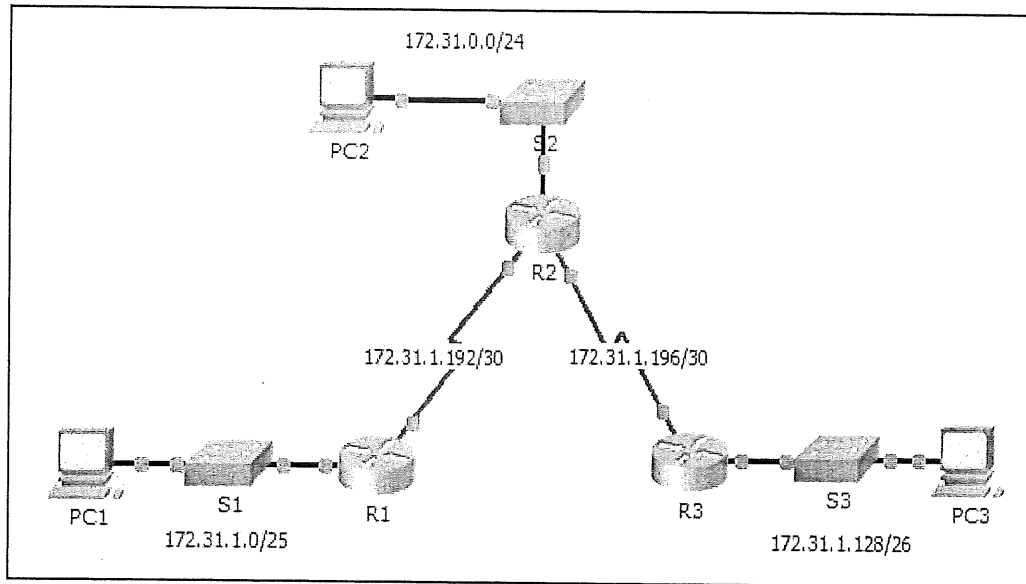


Figure 3: Static Routing

Table 2

Device	Interface	IPv4 Address	Subnet Mask	Default Gateway
R1	G0/0	172.31.1.1	255.255.255.128	N/A
	S0/0/0	172.31.1.194	255.255.255.252	N/A
R2	G0/0	172.31.0.1	255.255.255.0	N/A
	S0/0/0	172.31.1.193	255.255.255.252	N/A
	S0/0/1	172.31.1.197	255.255.255.252	N/A
R3	G0/0	172.31.1.129	255.255.255.192	N/A
	S0/0/1	172.31.1.198	255.255.255.252	N/A
PC1	NIC	172.31.1.126	255.255.255.128	172.31.1.1
PC2	NIC	172.31.0.254	255.255.255.0	172.31.0.1
PC3	NIC	172.31.1.190	255.255.255.192	172.31.1.129

- i. How many static routes are required by R2 and R3? (2 marks)
 - ii. Configure a recursive static route for R1. (9 marks)
 - iii. Configure a directly attached static route from R2 to every network not directly connected. (6 marks)
- b) Give **TWO (2)** examples for each Link State and Distance Vector Routing Protocol. (4 marks)
- c) Describe **THREE (3)** advantages of using Link State Routing Protocol. (6 marks)
- d) Configure RIP routing protocol on R1 based Figure 4 below.

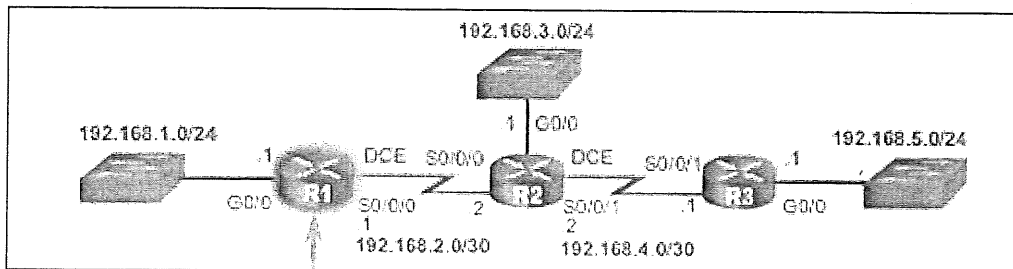


Figure 4: RIP Routing

(5 marks)

QUESTION 4

- a) Figure 5 shows the network topology that using OSPF routing protocol and OSPF process id 1. Using right command, execute OSPF routing protocol single area for Router 3 only.

(8 marks)

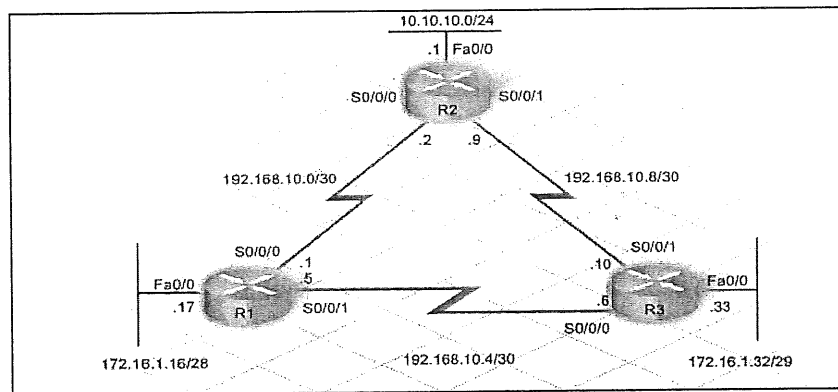


Figure 5: OSPF Network

- b) State **FOUR (4)** issues of EIGRP. (4 marks)

- c) Distinguish **TWO (2)** features of routing protocol EIGRP and RIP respectively.

(4 marks)

QUESTION 5

- a) Based on Figure 6 below, 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)

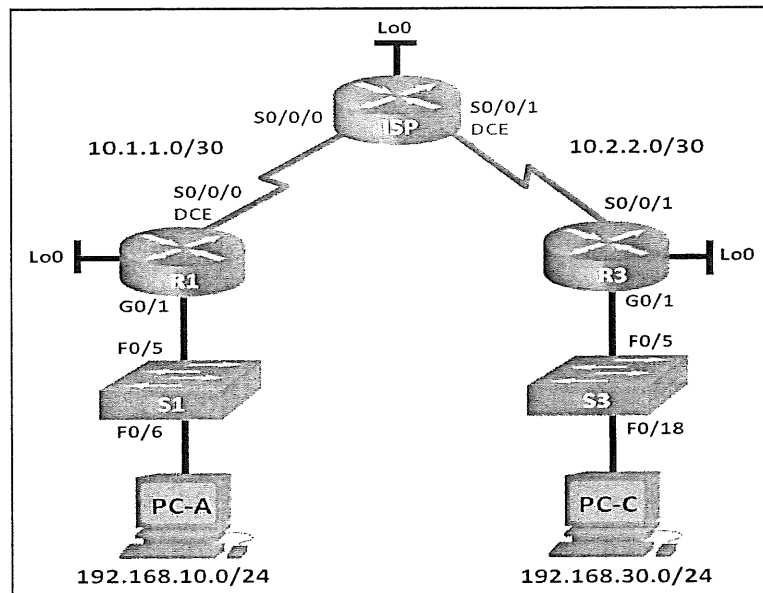


Figure 6: Access Control List Network

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

-----End of questions-----

