

SECTION B : 70 MARKS***BAHAGIAN B : 70 MARKAH*****INSTRUCTION :**

This section consists of **THREE (3)** structured questions. Answer **ALL** questions.

ARAHAN:

*Bahagian ini mengandungi **TIGA (3)** soalan berstruktur. Jawab **SEMUA** soalan.*

QUESTION 1***SOALAN 1***

- | | | |
|------------|---|--------------------------------|
| CLO1
C1 | a) Define Variable Length Subnet Masking (VLSM).
<i>Takrifkan Variable Length Subnet Masking (VLSM).</i> | [2 marks]
<i>[2 markah]</i> |
| CLO1
C1 | b) List TWO (2) IPv6 features.
<i>Senaraikan DUA (2) ciri-ciri IPv6.</i> | [2 marks]
<i>[2 markah]</i> |
| CLO1
C2 | c) Explain the advantages of implementing VLSM in subnetting.
<i>Terangkan kelebihan melaksanakan VLSM dalam subnetting.</i> | [2 marks]
<i>[2 markah]</i> |
| CLO1
C2 | d) Explain the following migration techniques for both IPv4 and IPv6.
<i>Terangkan teknik-teknik migrasi berikut bagi kedua-dua IPv4 dan IPv6.</i>
i. Tunneling / <i>Terowong.</i>
ii. Translation / <i>Terjemahan</i> | [4 marks]
<i>[4 markah]</i> |

CLO1
C3

- e) Write the following IPv6 address in the shortest form.

Tulis alamat IPv6 berikut ke dalam bentuk terpendek.

- i. 2001:0001:0002:0003:0004:0005:0006:0007
- ii. 2041:0000:140F:0000:0000:0000:875B:131B

[2 marks]

[2 markah]

CLO1
C3

- f) Write the suitable IPv6 address for all PCs in Figure B1(f) based on given Network ID.

Tulis alamat IPv6 yang bersesuaian untuk semua PC dalam Rajah B1(f) berdasarkan ID Rangkaian yang diberikan..

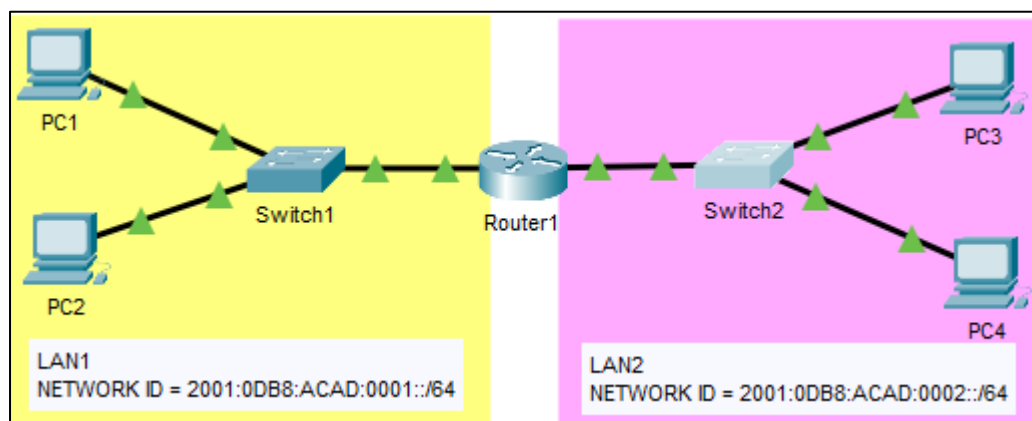


Figure B1(f) / Rajah B1(f)

[4 marks]

[4 markah]

CLO1
C3

- g) An Internet Service Provider (ISP) supplies a class C network of 192.168.20.0/24 to Berjaya Enterprise that requires two networks each to support 60 and 20 users. Calculate the network mask and network address for each network.

Pembekal Servis Internet membekalkan rangkaian kelas C iaitu 192.168.20.0/24 untuk Berjaya Enterprise yang memerlukan dua rangkaian yang setiap satu untuk menyokong seramai 60 dan 20 pengguna. Kira network mask dan network address untuk setiap rangkaian.

[4 marks]

[4 markah]

QUESTION 2**SOALAN 2**CLO1
C2

- a) Differentiate between Store-and-Fowarding and Cut-Through switch forwarding method.
Bezakan antara kaedah pemajuan switch Store-and-Fowarding dan Cut-Through.

[3 marks]

*[3 markah]*CLO1
C3

- b) Write the basic command to configure VLAN at switch S1 for the following situations:
Tulis arahan asas untuk konfigurasi VLAN pada switch S1 untuk situasi-situasi berikut:

- i) Create a VLAN 20.

Cipta VLAN 20.

- ii) Assign a Student as the VLAN 20 name.

Berikan nama Student sebagai nama VLAN 20.

- iii) Remove VLAN 20 from the VLAN database.

Buang VLAN 20 daripada pangkalan data VLAN.

[3 marks]

[3 markah]

CLO1
C4

- c) Figure B2(c) shows the current MAC Address Table in a switch and an incoming frame from port Fa0/3. Determine **TWO (2)** actions the switch will execute when it receives that frame.

*Rajah B2(c) menunjukkan MAC Address Table semasa dalam switch dan satu frame masuk dari port Fa0/3. Tentukan **DUA (2)** tindakan yang akan dilaksanakan oleh switch apabila ia menerima frame tersebut.*

Current MAC Address Table	
Ports	MAC Address
Fa0/1	24-77-03-c0-d3-42
Fa0/2	3c-97-0e-ba-b3-e3

Incoming Frame from Fa0/3				
Preamble	d0-d0-10-c0-fe-3e	b0-0c-ac-ad-ba-ca	IP Packet Data	FCS

Figure B2(c) / Rajah B2(c)

[4 marks]

[4 markah]

CLO1
C1

- d) List **TWO (2)** intermediary devices can be used to configure inter-VLAN.
*Senaraikan **DUA (2)** peranti perantara yang boleh digunakan untuk mengkonfigurasi inter-VLAN.*

[3 marks]

[3 markah]

CLO1
C3

- e) Create commands to configure Router R1 to allow communication between PC1 and PC3 across multiple VLAN in Figure B2(e).

Cipta arahan untuk konfigurasi Router R1 untuk membolehkan komunikasi antara PC1 dan PC2 merentasi pelbagai VLAN dalam Rajah B2(e).

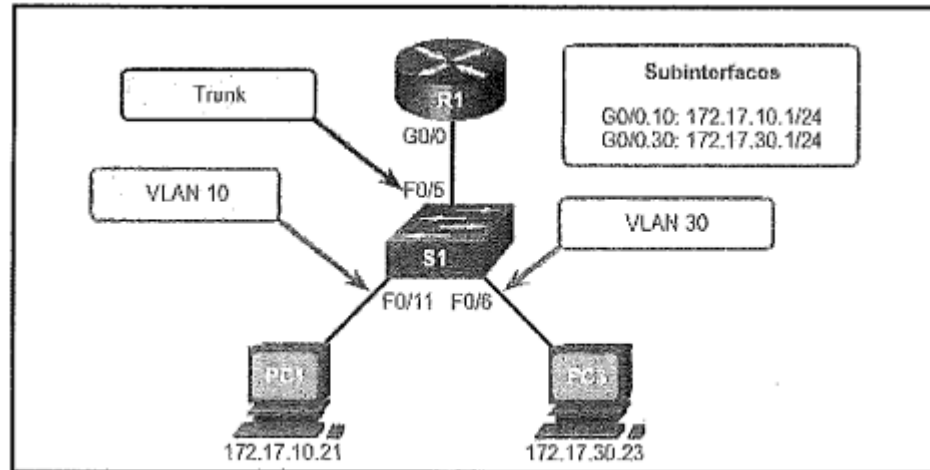


Figure B2(e) / Rajah B2(e)

[4 marks]

[4 markah]

CLO1
C3

- f) Illustrate a suitable topology to show a correct Legacy Inter-Vlan routing for **THREE (3)** VLAN.

*Jelaskan topologi yang sesuai untuk menunjukkan Legacy Inter-Vlan routing yang betul bagi **THREE (3)** VLAN.*

[4 marks]

[4 markah]

CLO1
C4

- g) Refer to Figure B1. A network administrator is verifying the configuration of inter-VLAN routing. Users complain that PCs on different VLANs cannot communicate. Based on the output, predict **TWO (2)** errors may be occurred on switch interface Gi1/1.

Rujuk Rajah B1. Seorang pentadbir rangkaian sedang mengesahkan konfigurasi inter-VLAN routing. Pengguna mengadu bahawa PC-PC pada VLAN yang berbeza tidak boleh berkomunikasi. Berdasarkan output, ramalkan **DUA (2)** ralat yang mungkin berlaku pada antara muka Gi1/1.

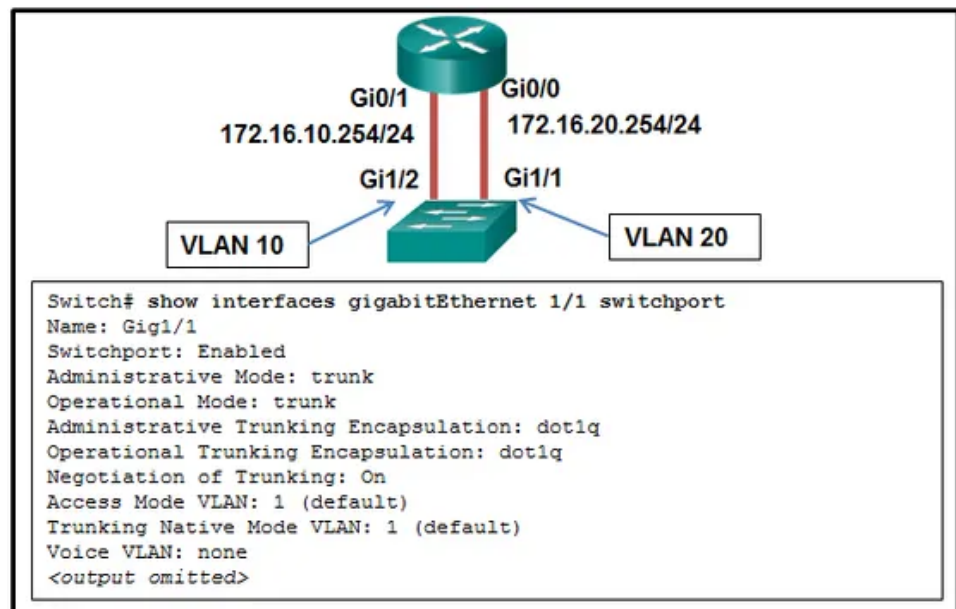


Figure B2(g) / Rajah B2(g)

[4 marks]

[4 markah]

QUESTION 3

SOALAN 3

CLO1
C2

- a) Describe the features of root port in Spanning Tree Protocols (STP).
Terangkan ciri-ciri root port dalam Spanning Tree Protocols (STP).

[2 marks]

[2 markah]

CLO1
C2

- b) Differentiate the blocking and listening port state in Spanning Tree Protocols (STP).
Bezakan keadaan port blocking dan listening dalam Spanning Tree Protocols (STP).

[4 marks]

[4 markah]

CLO1
C3

- c) Figure B3(c) shows the EtherChannel summary information. The output of the show EtherChannel summary command indicates that the EtherChannel is down. Apply **THREE (3)** steps to troubleshoot the output given.

*Rajah B3(c) menunjukkan maklumat ringkasan EtherChannel. Output arahan show EtherChannel summary menunjukkan bahawa EtherChannel dalam keadaan down. Aplikasikan **TIGA (3)** langkah untuk menyelesaikan masalah output tersebut.*

```

S1# show etherchannel summary
Flags: D - down          P - bundled in port-channel
       I - stand-alone  s - suspended
       H - Hot-standby (LACP only)
       R - Layer3       S - Layer2
       U - in use       N - not in use, no aggregation
       f - failed to allocate aggregator
       M - not in use, minimum links not met
       m - not in use, port not aggregated due to minimum links not met
       u - unsuitable for bundling
       w - waiting to be aggregated
       d - default port
       A - formed by Auto LAG
Number of channel-groups in use: 1
Number of aggregators:          1
Group  Port-channel  Protocol    Ports
-----+-----+-----+-----
  1    Po1(SD)      -           Fa0/1(D)  Fa0/2(D)

```

Figure B3(c) / Rajah B3(c)

[3 marks]

[3 markah]

CLO1
C4

- d) Based on **Figure B3(d)**, assign which switch will be elected as the root bridge and which switch will place a port in blocking mode.

Berdasarkan Rajah B3(d), tugaskan switch yang manakah akan dipilih sebagai jambatan root dan switch yang manakah akan diletakkan port dalam blocking mode.

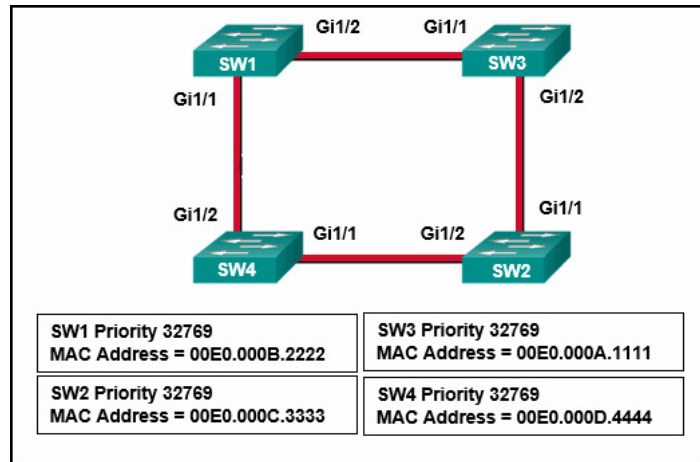


Figure B3(d) / Rajah B(d)

[3 marks]

[3 markah]

CLO1
C1

- e) List **TWO (2)** port security violation modes at switch.

Senaraikan DUA (2) mod pelanggaran keselamatan port pada switch.

[2 marks]

[2 markah]

CLO1
C2

- f) List **FOUR (4)** commands to verify the port security configuration.

Senaraikan EMPAT (4) arahan untuk mengesahkan konfigurasi keselamatan port.

[4 marks]

[4 markah]

CLO1
C3

- g) Write a command to configure the VTY lines to check the local username database for login credentials and to only allow SSH for remote access at Switch1.

Tulis arahan untuk mengkonfigurasi talian VTY untuk memeriksa pangkalan data pengguna tempatan untuk kelayakan log masuk dan hanya membenarkan SSH untuk akses remote pada Switch1.

[3 marks]

[3 markah]

CLO1
C3

- h) Write the set of commands that would allow only **TWO (2)** laptops to use the port FastEthernet0/7.

*Tulis set arahan yang hanya akan membolehkan **DUA (2)** komputer riba menggunakan port FastEthernet0/7.*

[4 marks]

[4 markah]

SOALAN TAMAT