

SECTION B : 55 MARKS***BAHAGIAN B : 55 MARKAH*****INSTRUCTION:**

This section consists of **TWO (2)** structured questions. Answer **ALL** questions.

ARAHAN:

Bahagian ini mengandungi DUA (2) soalan berstruktur. Jawab SEMUA soalan.

QUESTION 1 / SOALAN 1CLO1
C1

- (a) Give **THREE (3)** OSPF network type.

Berikan TIGA (3) jenis rangkaian OSPF.

[3 marks]
[3 markah]

CLO1
C2

- (b) Explain **THREE (3)** advantages of using OSPF.

Terangkan TIGA (3) kelebihan menggunakan OSPF.

[3 marks]
[3 markah]

CLO2
C2

- (c) Write a command to enable OSPFv2 on a router with process-id 10.

Tulis arahan untuk mengaktifkan OSPFv2 pada router menggunakan process-id 10.

[2 marks]
[2 markah]

CLO2
C3

- (d) Referring to Figure B1(d), a network administrator must activate the interface before he/she can configure OSPFv2. Apply the correct command to accomplish it for:

Rujuk Figure B1(d). Pentadbir rangkaian harus mengaktifkan antara muka sebelum beliau boleh mengkonfigurasi OSPFv2. Laksanakan arahan yang betul untuk mencapainya bagi:

- (i) Router R3 G0/0 interface

Antara muka G0/0 Router R3

- (ii) Router R3 S0/0/0 interface

Antara muka S0/0/0 Router R3

- (iii) Router R3 S0/0/1 interface

Antara muka S0/0/1 Router R3

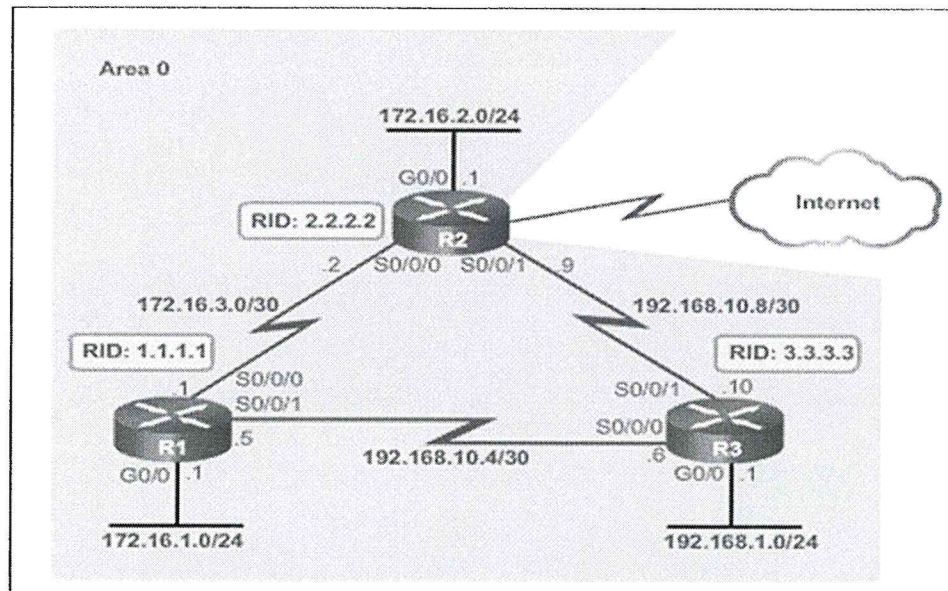


Figure B1(d) / Rajah B1(d)

[6 marks]
[6 markah]

CLO1
C2

- (e) Explain **TWO (2)** solutions offered by multi-area OSPF to solve single area OSPF problems.

*Terangkan **DUA (2)** penyelesaian yang ditawarkan oleh multi-area OSPF untuk menyelesaikan masalah single area OSPF.*

[4 marks]
[4 markah]

CLO2
C4

- (f) Referring to Figure B1(f), all of the routers have been configured with multi-area OSPFv2. However, router R1 and router R2 are not forming OSPF neighbor adjacency. Analyze the figure and answer the following questions:

Rujuk Rajah B1(f). Semua router telah dikonfigurasi dengan 'multi area' OSPFv2. Tetapi router R1 dan router R2 tidak membentuk persekitaran OSPF tetangga. Analisa rajah dan menjawab berikut:

- (i) Determine the reason router R1 and router R2 are not forming OSPF neighbor adjacency.

Tentukan alasan router R1 dan router R2 tidak membentuk persekitaran tetangga OSPF.

- (ii) Identify **TWO (2)** commands that can be executed on router R1 to solve the problems.

*Kenal pasti **DUA (2)** perintah yang boleh dilakukan pada router R1 untuk menyelesaikan masalah ini.*

```
R2#show ip protocols

Routing Protocol is "ospf 1"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 192.168.10.5
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    192.168.10.4 0.0.0.3 area 0
    192.168.10.0 0.0.0.3 area 0
    10.2.1.0 0.0.0.255 area 0
  Routing Information Sources:
    Gateway         Distance      Last Update
    192.168.10.5     110          00:04:54
    192.168.10.6     110          00:04:55
  Distance: (default is 110)
```

```
R1#show ip protocols

Routing Protocol is "ospf 1"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 192.168.10.1
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    10.1.1.0 0.0.0.255 area 1
    10.1.2.0 0.0.0.255 area 1
    192.168.10.0 0.0.0.3 area 1
  Routing Information Sources:
    Gateway         Distance      Last Update
    192.168.10.1     110          00:26:27
  Distance: (default is 110)

R1#
00:26:40: %OSPF-4-ERRRCV: Received invalid packet: mismatch area ID, from backbone area must be
virtual-link but not found from 192.168.10.1, Serial0/0/0
```

Figure B1(f) / *Rajah B1(f)*

[4 marks]
[4 markah]

CLO1
C3

- (g) Refer to Figure B1(g). Based on IP addressing scheme on figure B1(g), calculate route summarization for Loopback interface on **R3** for **Area 2** networks.

Rujuk Rajah B1(g). Berdasarkan skema alamat IP pada rajah B1(g), kira ringkasan laluan antara muka Loopback R3 untuk rangkaian 'Area 2'.

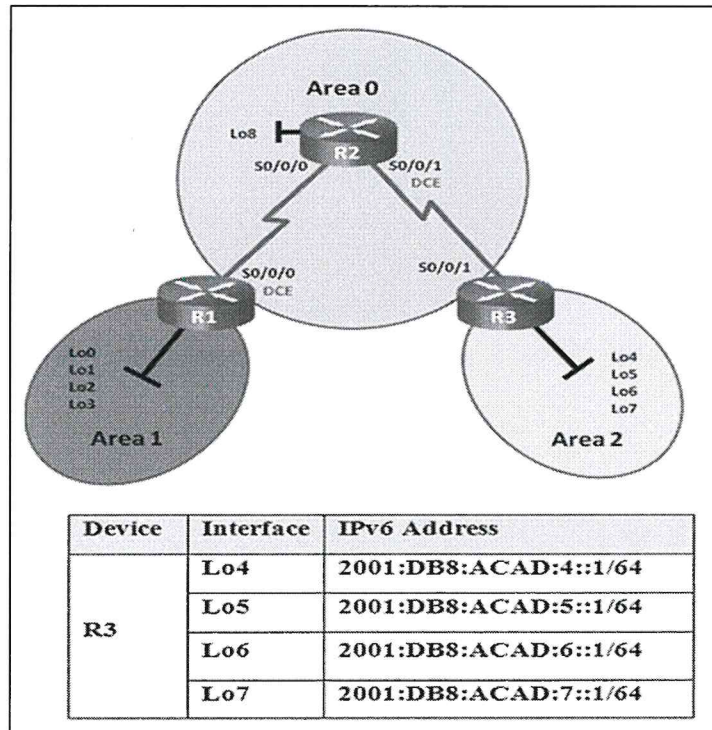


Figure B1(g) / Rajah B1(g)

[4 marks]
[4 markah]

- (h) Refer to Figure B1(h). A network administrator has configured his/her company with OSPF routing protocol. Unfortunately, R1, R2 and R3 were not performing adjacencies. Interpret the cause of problems.

Rujuk Rajah B1(h). Seorang pentadbir rangkaian telah mengkonfigurasi syarikat beliau dengan menggunakan protokol routing OSPF. Akan tetapi, R1, R2 dan R3 tidak melaksanakan adjacencies. Tafsirkan punca permasalahan.

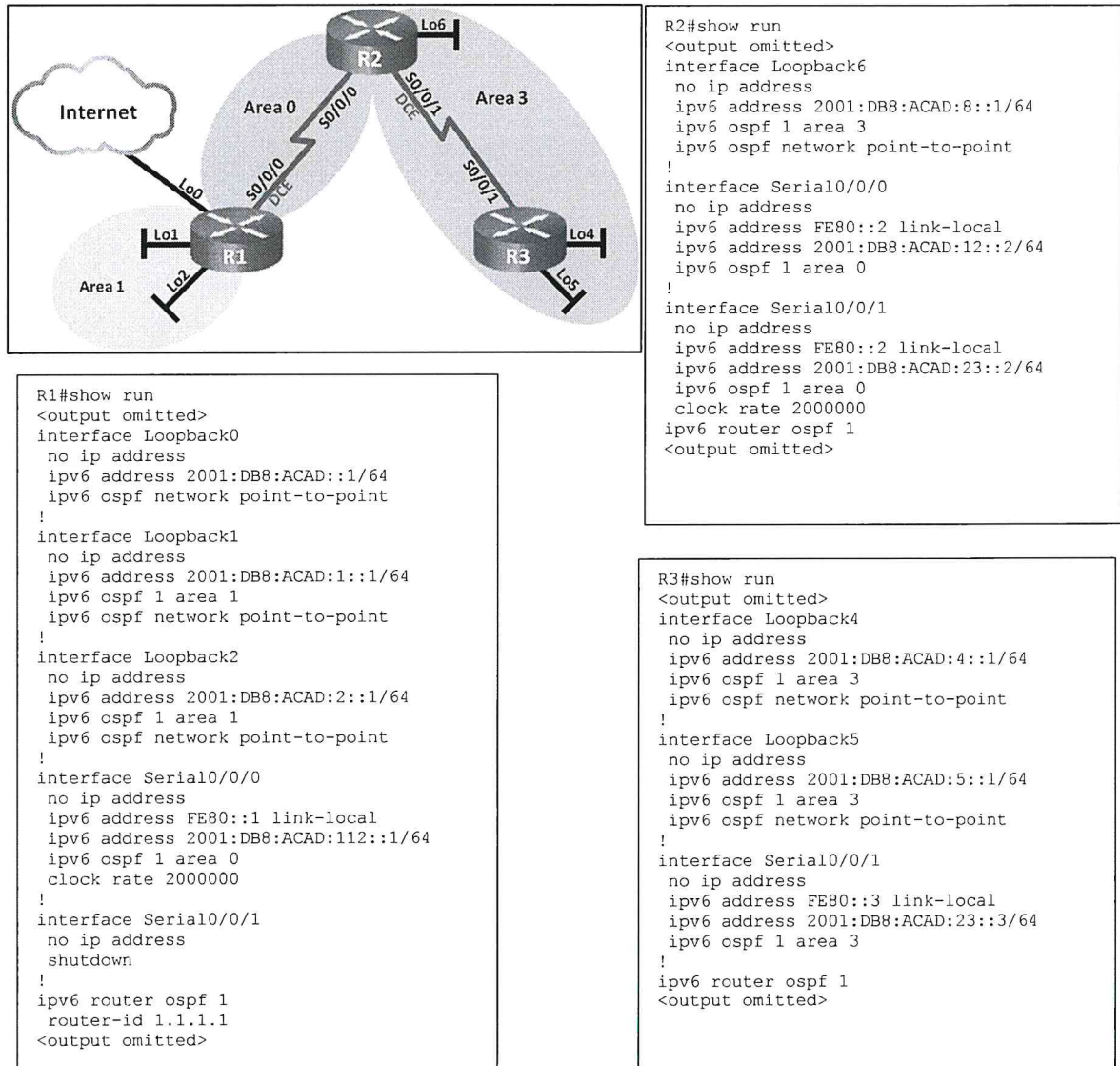


Figure B1(h) / Rajah B1(h)

[4 marks]
[4 markah]

QUESTION 2 / SOALAN 2

CLO1
C2

- (a) Enhances Interior Gateway Protocol (EIGRP) uses partial and bounded updates. Describe partial and bounded update in EIGRP.

Enhances Interior Gateway Protocol (EIGRP) menggunakan kemaskini partial dan bounded. Terangkan kemaskini partial dan bounded dalam EIGRP.

[4 marks]
[4 markah]

CLO2
C3

- (b) Refer to Figure B2(b). The figure shows a network topology. Implement basic EIGRP configurations based on the given statement.

Rujuk Rajah B2(b). Rajah menunjukkan topologi rangkaian. Laksanakan konfigurasi asas EIGRP berdasarkan pernyataan yang diberikan.

- (i) Write commands to advertise directly connected networks on router R1.

Tulis arahan untuk mengiklankan rangkaian yang berkaitan secara langsung di router R1.

- (ii) Write a command to configure the router R1 LAN interfaces to not advertise EIGRP updates.

Tulis arahan untuk mengkonfigurasi antara muka LAN R1 untuk tidak mengiklankan kemaskini EIGRP.

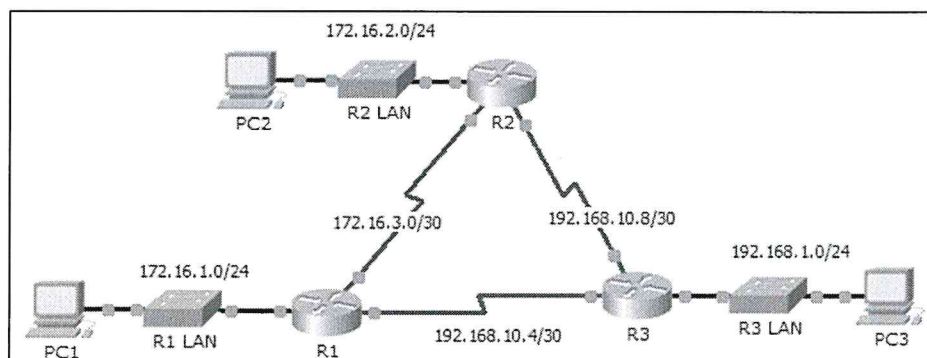


Figure B2(b) / Rajah B2(b)

[5 marks]
[5 markah]

CLO1
C2

- (c) Explain **THREE (3)** benefits of using routes automatic summarization.

Terangkan TIGA (3) kebaikan menggunakan ringkasan laluan secara automatik.

[3 marks]

[3 markah]

CLO1
C4

- (d) Referring to Figure B2d, all routers have been configured with EIGRP and all interfaces have been configured with correct IP address. Ping test on router R3 shows that ping is unsuccessful. Analyze the figure and answer these questions:

Rujuk Rajah B2d. Semua router telah dikonfigurasi dengan EIGRP dan semua antara muka telah dikonfigurasi dengan alamat IP yang betul. Ujian ping pada router R3 menunjukkan ping tidak berjaya. Analisa rajah tersebut dan jawab soalan-soalan ini:

- (i) Determine the reason R3 failed to ping R1 network.

Tentukan alasan R3 gagal untuk ping rangkaian R1.

- (ii) Identify the solution to overcome this problem.

Kenal pasti penyelesaian bagi mengatasi masalah ini.

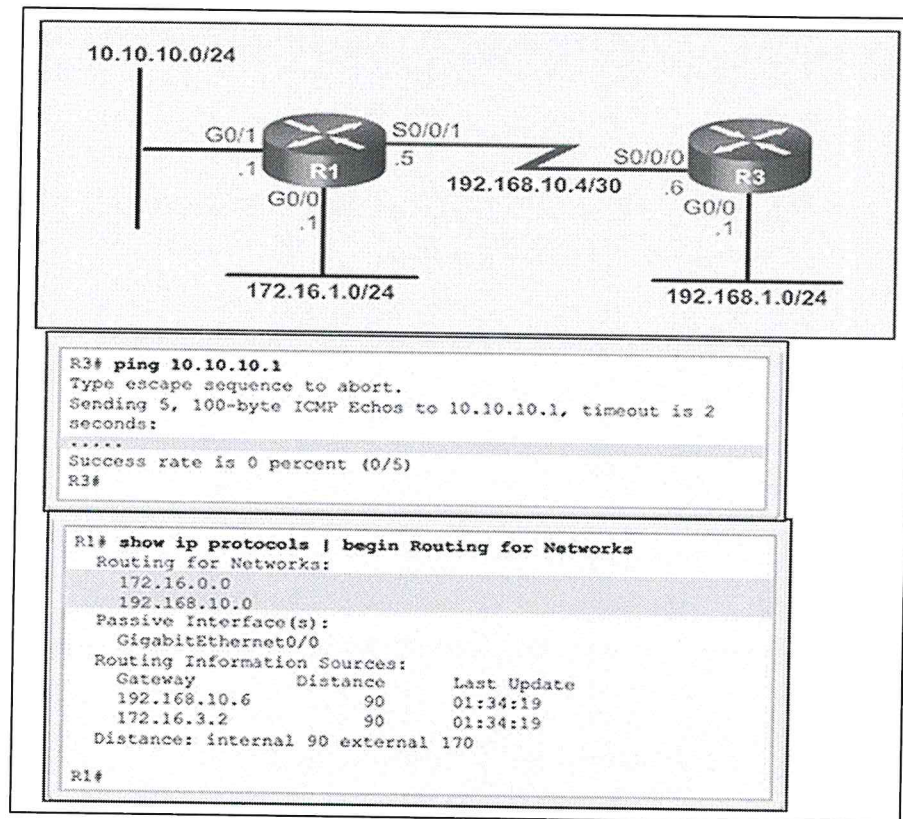


Figure B2(d) / Rajah B2(d)

[3 marks]

[3 markah]

CLO2
C3

- (e) Referring to Figure B2(e), a network administrator wants to protect EIGRP network with MD5 authentication on router R1's interface F 0/0. The administrator already configures the "key chain", "key" and "key string" for EIGRP as shown in Figure B2(e). Conduct the commands to complete the EIGRP MD5 authentication.

Rujuk Rajah B2(e). Pentadbir rangkaian mahu melindungi rangkaian EIGRP dengan pengesahan MD5 di antara muka F 0/0 pada router R1. Pentadbir sudah mengkonfigurasi "key chain", "key" dan "key string" untuk EIGRP seperti yang ditunjukkan dalam Rajah B2(e). Laksanakan arahan untuk melengkapkan pengesahan EIGRP MD5 tersebut.

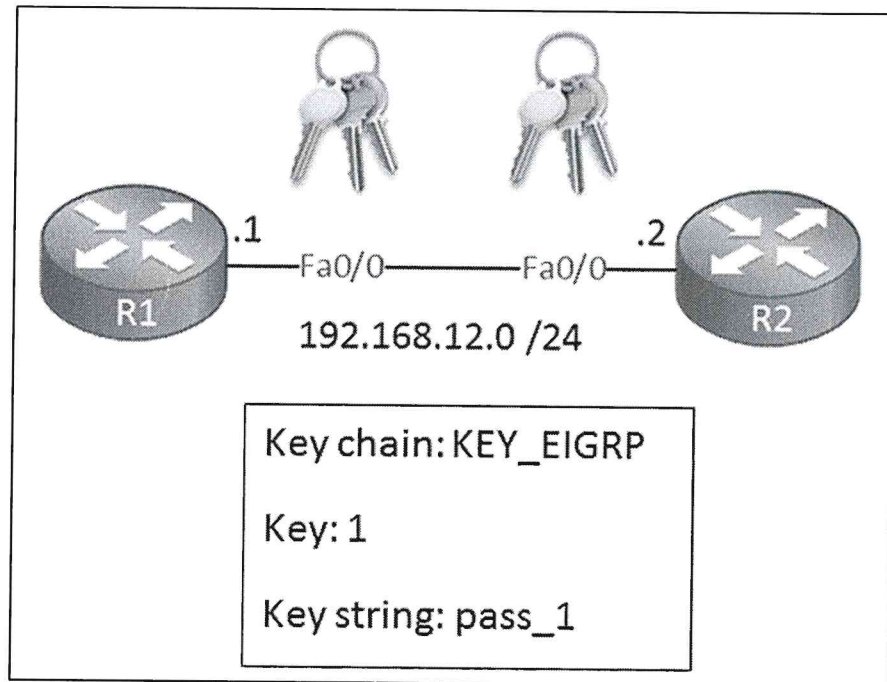


Figure B2(e) / Rajah B2(e)

[5 marks]
[5 markah]