

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) List **FIVE (5)** WAN technologies under Private WAN infrastructure.

Senaraikan LIMA (5) teknologi WAN dibawah Infrastruktur WAN peribadi.

[5 marks]

[5 markah]

- b) High-Level Data Link Control (HDLC) and Point-to-Point Protocol (PPP) are layer 2 protocols that are used for point-to-point and multipoint communication.

High-Level Data Link Control (HDLC) dan Point-to-Point Protocol (PPP) ialah protokol lapisan 2 yang digunakan untuk komunikasi titik-ke-titik dan berbilang titik.

CLO1
C2

- i) Explain **ONE (1)** difference between Standard HDLC and PPP.

Terangkan SATU (1) perbezaan antara HDLC standard dan PPP.

[3 marks]

[3 markah]

CLO1
C2

- ii) Explain **TWO (2)** frame fields exist in both HDLC and PPP frame structure.

Terangkan DUA (2) medan bingkai yang wujud dalam kedua-dua struktur bingkai HDLC dan PPP.

[3 marks]

[3 markah]

CLO1
C3

- c) Refer to Figure B1 (c), write a configuration statement for Router 2 **R2** in the Generic Router Encapsulation Tunnel (GRE).

Rujuk Rajah B1 (c), tulis pernyataan konfigurasi untuk Router R2 dalam Generic Router Encapsulation Tunnel (GRE).

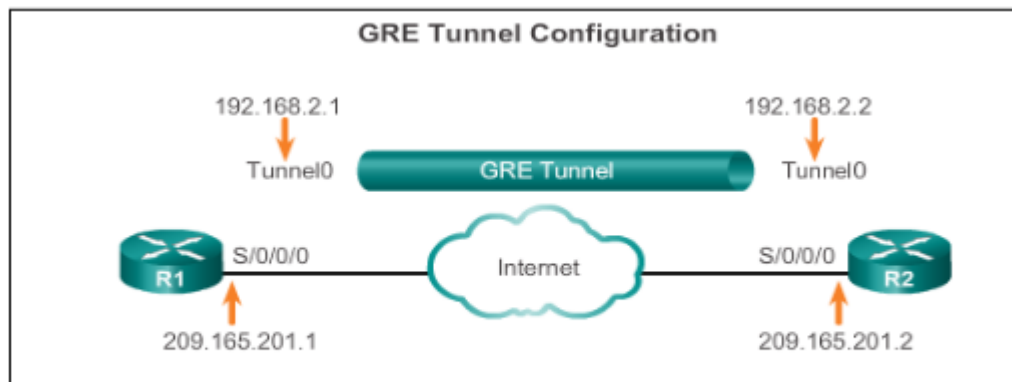


Figure B1(c) / Rajah B1(c)

- i). Write the command to create a tunnel interface.

Tuliskan arahan untuk membuat antara muka terowong.

[2 mark]

[2 markah]

- ii). Write the command to apply Generic Routing Encapsulation (GRE) over on a tunnel interface

Tuliskan arahan untuk melaksanakan Generic Routing Encapsulation (GRE) pada antara muka terowong.

[2 marks]

[2 markah]

- iii). Construct an IP address for the tunnel interface

Bina alamat IP untuk antara muka terowong.

[2 marks]

[2 markah]

- iv). Specify the tunnel source IP address

Tentukan alamat IP sumber terowong.

[2 marks]

[2 markah]

- v). Specify the tunnel source IP address

Tentukan alamat IP destinasi terowong.

[2 marks]

[2 markah]

- d) i) Analyze the meaning of code = 4, id = 3 and len = 48 in Figure B1d(i).

Analisa maksud code = 4, id = 3 dan len = 48 di Rajah B1d(i).

CLO1
C4

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R2# debug ppp authentication

Serial0: Unable to authenticate. No name received from
Serial0: Unable to validate CHAP response. USERNAME pio
Serial0: Unable to validate CHAP response. No password
Serial0: Failed CHAP authentication with remote.
Remote message is Unknown name
Serial0: remote passed CHAP authentication.
Serial0: Passed CHAP authentication with remote.
Serial0: CHAP input code = 4 id = 3 len = 48

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Figure B1(d)(i) / Rajah B1(d)(i)

[3 marks]

[3 markah]

CLO1
C4

ii)

A network engineer is monitoring poor-quality PPP WAN link that periodically shuts down. An examination of the interface configurations show that the **ppp quality 90** command has been issued.

*Jurutera rangkaian telah melihat kualiti yang rendah pautan PPP WAN yang selalu terputus. Pemeriksaan pada konfigurasi antaramuka menunjukkan penggunaan arahan **ppp quality 90** telah digunakan.*

Figure B1(d)(ii) / Rajah B1(d)(ii)

Analyze why the error has occurred and the action need to be taken by the engineer to solve the problem based on Figure B1(d)(ii).

Analisa mengapa kesalahan terjadi dan tindakan yang perlu dilakukan jurutera tersebut untuk menyelesaikan masalah tersebut berdasarkan Rajah B1(d)(ii).

[3 marks]

[3 markah]

QUESTION 2**SOALAN 2**CLO1
C1

- a) List **TWO (2)** types of equipment that are required to send signals upstream and downstream on a cable system.

*Senaraikan **DUA (2)** jenis peralatan yang diperlukan untuk menghantar isyarat ke hulu dan hilir pada sistem kabel.*

[2 marks]

[2 markah]

- b) Refer to Figure B2(b). The customer's router, R1 is connected to the ISP router, R2 using DSL. The network administrator performs verification using **show ip interface brief** and **show interface dialer 2** commands on R1 with respect to the PPPoE connection to R2. Answer the following questions.

*Rujuk Rajah B2(b). Penghala pelanggan, R1 disambungkan ke penghala ISP, R2 menggunakan DSL. Seorang pentadbir rangkaian melakukan pengesahbetulan menggunakan arahan **show ip interface brief** dan **show interface dialer 2** pada R1 berkenaan dengan sambungan PPPoE ke R2. Jawab soalan berikut.*

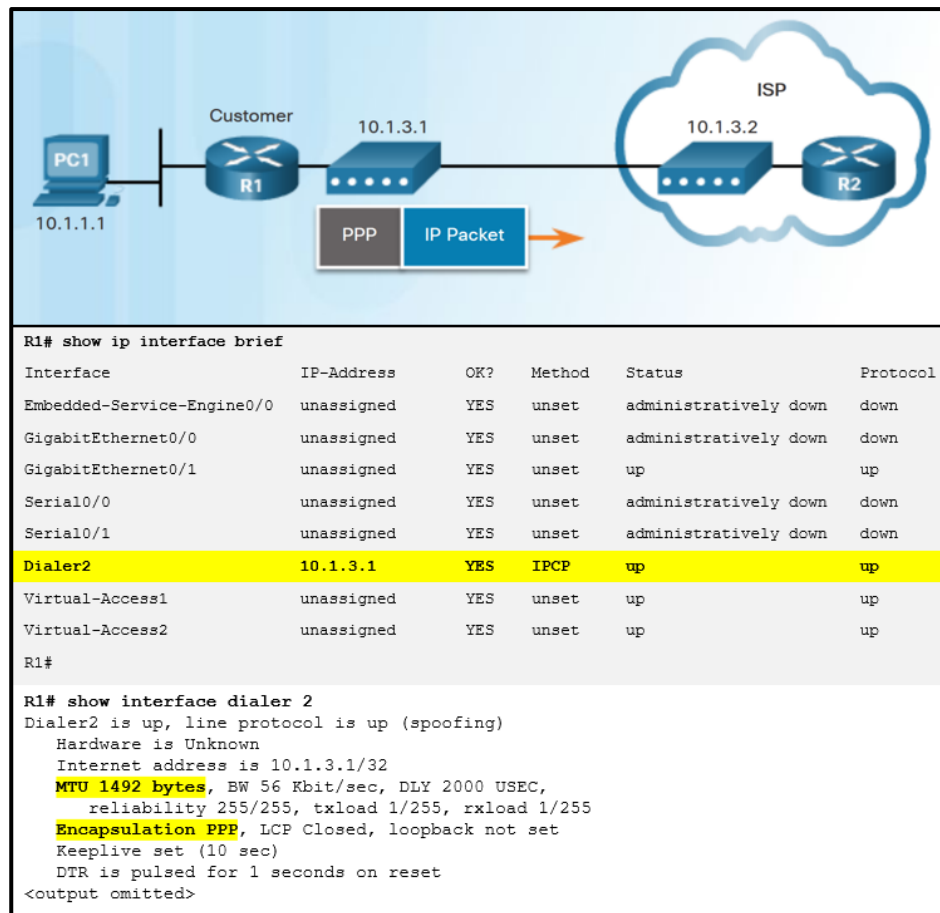


Figure B2(b) / Rajah B2(b)

CLO1
C3

- i). Write THREE (3) commands to verify a Point-to-Point Protocol over Ethernet (PPPoE) configuration on a router.

Tulis TIGA (3) perintah untuk mengesahkan Point-to-Point Protocol over Ethernet (PPPoE) pada penghala.

[3 marks]

[3 markah]

CLO1
C3

- ii). Calculate the reduced Maximum Transmission Unit (MTU) size and give the reason of MTU size reduction for a PPPoE DSL configuration.

Hitung saiz Unit Penghantaran Maksimum (MTU) yang dikurangkan dan berikan sebab pengurangan saiz MTU untuk konfigurasi DSL PPPoE.

[3 marks]

[3 markah]

- c) Refer to Figure B2(c). Analyze the situation given and answer the following questions.

Rujuk Rajah B2(c). Analisa situasi yang diberikan dan jawab soalan-soalan berikut.

Two teleworkers are using different broadband solutions to connect to the main office. Teleworker A is experiencing slow upstream data rates during peak hour and bandwidth is shared by many users in his housing area. Meanwhile, teleworker B has coverage issues, and limited bandwidth when multiple devices are connected to the internet.

Dua pekerja jarak jauh menggunakan penyelesaian jalur lebar yang berbeza untuk menyambung ke pejabat utama. Pekerja jarak jauh A mengalami kadar data hulu yang perlahan pada waktu puncak dan lebar jalur dikongsi oleh ramai pengguna di kawasan perumahannya. Sementara itu, pekerja jarak jauh B sering mengalami isu liputan dan lebar jalur terhad apabila berbilang peranti disambungkan ke internet.

Figure B2(c) / Rajah B2(c)

CLO1
C4

- i) Classify the broadband solutions used by both teleworkers.

Klasifikasikan penyelesaian jalur lebar yang digunakan oleh kedua-dua pekerja jarak jauh.

[3 marks]

[3 markah]

CLO1
C4

- ii) Describe **EACH** of broadband solutions stated in (i).

*Huraikan **SETIAP** daripada penyelesaian jalur lebar yang dinyatakan dalam (i).*

[3 marks]

[3 markah]

CLO1
C1

- d) List **THREE (3)** common LAN attacks.

*Senaraikan **TIGA (3)** serangan-serangan biasa LAN.*

[3 marks]

[3 markah]

CLO1
C2

- e) Explain the following LAN security attacks.

Terangkan serangan keselamatan LAN berikut.

- i). MAC address table flooding attack.

Serangan pembersihan jadual alamat MAC.

[3 marks]

[3 markah]

CLO1
C2

- ii). DHCP starvation attack.

Serangan kebuluran DHCP.

[3 marks]

[3 markah]

QUESTION 3**SOALAN 3**CLO1
C3

- a) i) Construct commands to configure SNMPv2 using information in Table B3(a)(i).

Bina arahan untuk konfigur SNMPv2 menggunakan maklumat di Jadual B3(a)(i).

Step 1 <i>Langkah 1</i>	Configure the community string batonaug and access level string read only <i>Konfigur string komuniti batonaug dan aras capaian 'read only'</i>
Step <i>Langkah 2</i>	Document the location of the device using NOC_SNMP_MANAGER <i>Dokumen lokasi alat menggunakan NOC_SNMP_MANAGER</i>
Step 3 <i>Langkah 3</i>	Document the system contact using Wayne World <i>Dokumen kontak sistem menggunakan Wayne World</i>
Step 4 <i>Langkah 4</i>	Restrict SNMP access to SNMP managers that are permitted by an ACL using standard SNMP_ACL <i>Hadkan capaian SNMP kepada pengurus SNMP yang dibenarkan oleh ACL menggunakan 'standart SNMP_ACL'</i>
Step 5 <i>Langkah 5</i>	Specify the recipient of the SNMP trap operations with the host 192.168.1.3 SNMP version 2c <i>Tentukan penerima operasi perangkap SNMP dengan hos 192.168.1.3 versi 2c SNMP</i>
Step 6 <i>Langkah 6</i>	Enable traps on an SNMP agent <i>Membuka perangkap dalam ejen SNMP</i>

Table B3(a)(i) / *Jadual B3(a)(i)*

[6 marks]

[6 markah]

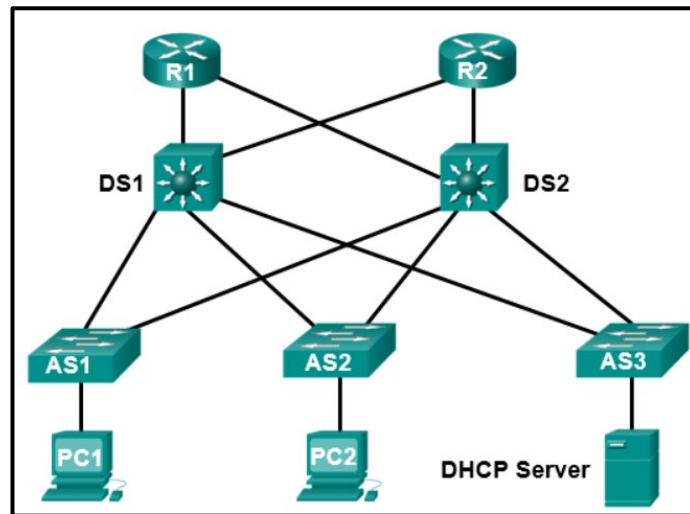


Figure B3(a) / Rajah B3(a)

CLO1
C3

ii) Redraw the given topology with the **CORRECT** setting for trusted port and untrusted port as part of the DHCP snooping configuration for mitigating DHCP attacks.

*Lukis semula topologi yang diberikan dengan penetapan yang **BETUL** bagi port dipercayai dan port tidak dipercayai sebagai sebahagian daripada konfigurasi DHCP snooping untuk mengurangkan serangan DHCP.*

[2 marks]

[2 markah]

b) Refer to Figure B3(b). A network administrator of a company is using Switched Port Analyzer (SPAN) to troubleshoot their company's network issues that caused by slow network application and faulty NIC of older system. Answer the following questions.

Rujuk Rajah B3(b). Seorang pentadbir rangkaian syarikat sedang menggunakan Switched Port Analyzer (SPAN) untuk menyelesaikan masalah rangkaian syarikat mereka yang disebabkan oleh aplikasi rangkaian yang perlahan dan NIC yang rosak pada sistem lama. Jawab soalan berikut.

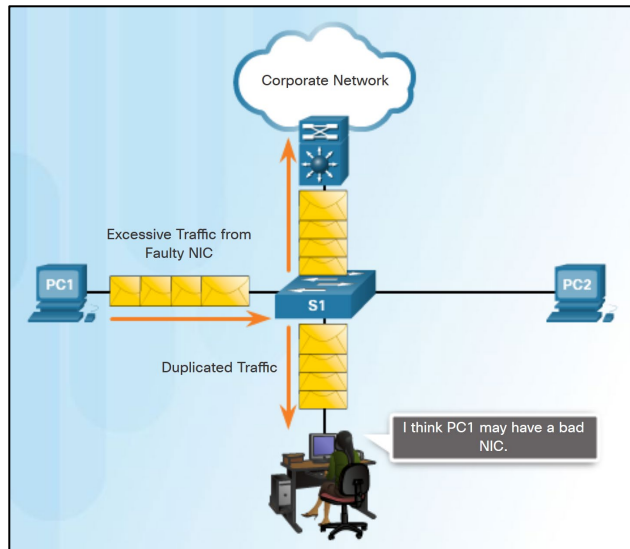


Figure B3(b) / Rajah B3(b)

CLO1
C4

- i) Analyze on ways SPAN can be implemented in the company.
Analisa cara-cara SPAN boleh dilaksanakan dalam syarikat.

[3 marks]

[3 markah]

CLO1
C4

- ii) Analyze how SPAN will help the network administrator resolve those issues.

Analiskan bagaimana SPAN akan membantu pentadbir rangkaian menyelesaikan isu tersebut.

[3 marks]

[3 markah]

- CLO1
C1
- c) List **TWO (2)** characteristics of video traffic.
Senaraikan DUA (2) ciri-ciri trafik video.
- [2 marks]
[2 markah]
- CLO1
C2
- d) Explain **TWO (2)** benefits and **TWO (2)** drawbacks of Integrated Services (IntServ) model.
Jelaskan DUA (2) kelebihan dan DUA (2) kelemahan model Integrated Services (IntServ).
- [4 marks]
[4 markah]

SOALAN TAMAT