

SULIT



BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK
KEMENTERIAN PENDIDIKAN TINGGI

JABATAN TEKNOLOGI MAKLUMAT DAN KOMUNIKASI

PEPERIKSAAN AKHIR
SESI JUN 2015

DFN2113: INTRODUCTION TO NETWORK

TARIKH : 22 OKTOBER 2015
MASA : 8.30 AM – 10.30 AM (2 JAM)

Kertas ini mengandungi **SEMBILAN BELAS (19)** halaman bercetak.

Bahagian A: Objektif (20 soalan)

Bahagian B: Struktur/Esei (4 soalan)

Dokumen sokongan yang disertakan : Tiada

JANGAN BUKA KERTAS SOALANINI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

ANSWER

1. The following is a list of words that have been used in the past to describe the condition of the environment. Please indicate which words you think best describe the condition of the environment.

polluted
contaminated
degraded
overused
overexploited
overpopulated
overfished
overgrazed
overmined
overharvested
overlogged
overfertilized
overirrigated
overgrazed
overmined
overharvested
overlogged
overfertilized
overirrigated

ANSWER

2. The following is a list of words that have been used in the past to describe the condition of the environment. Please indicate which words you think best describe the condition of the environment.

Killed
Poisoned
Contaminated
Polluted
Overused
Overexploited
Overpopulated
Overfished
Overgrazed
Overmined
Overharvested
Overlogged
Overfertilized
Overirrigated
Overgrazed
Overmined
Overharvested
Overlogged
Overfertilized
Overirrigated

3. The following is a list of words that have been used in the past to describe the condition of the environment. Please indicate which words you think best describe the condition of the environment.

SECTION A: 30 MARKS**BAHAGIAN A: 30 MARKAH****INSTRUCTION:**

This section consists of TWENTY (20) objective questions. Mark your answers in the OMR form provided.

ARAHAN:

Bahagian ini mengandungi DUA PULUH (20) soalan objektif. Tandakan jawapan anda di dalam borang OMR yang disediakan.

CLO1
C1

1. Which device performs the function of determining the path that messages should take through internetwork?
Peranti yang manakah menjalankan fungsi untuk menentukan laluan yang perlu diambil oleh pesanan sepanjang rangkaian?
- A. A router
Router
- B. A firewall
Firewall
- C. A web server
Pelayan Web
- D. A DSL Modem
Modem DSL

CLO1
C2

2. Define converged network.

Takrifkan rangkaian bertumpu.

- A. A single network channel capable of delivering multiple communication forms
Saluran rangkaian yang berupaya menghantar pelbagai bentuk komunikasi
- B. A network that allows users to interact directly with each other over multiple channels
Satu rangkaian yang membenarkan pengguna untuk berinteraksi secara terus antara satu sama lain melalui pelbagai saluran
- C. A dedicated network with separate channels for video and voice services
Satu rangkaian khas dengan saluran yang berbeza untuk video dan perkhidmatan suara
- D. A network that is limited to exchanging character-based information
Rangkaian yang dihadkan untuk pertukaran maklumat berdasarkan karakter

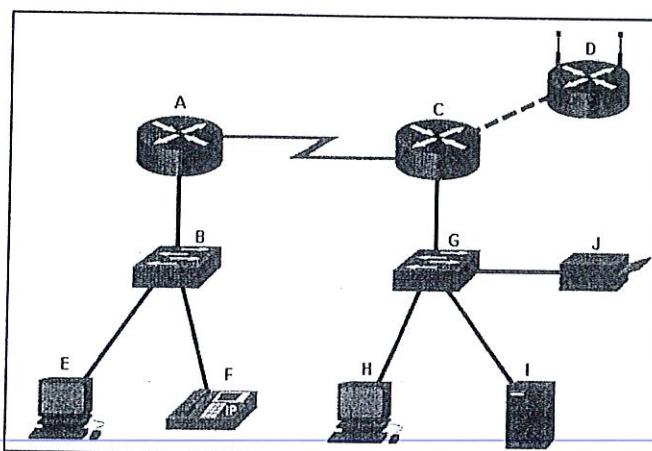


Figure A1 / Rajah A1

CLO1
C1

3. Referring to Figure 1A, which set of devices contains only intermediary devices?

Merujuk pada Rajah 1A, set peranti manakah yang hanya mempunyai peranti pengantara?

- A. A,B, D, G
- B. A, B, E, F
- C. C, D, G, I
- D. G, H, I, J

CLO1
C1

4. Name the OSI model that is responsible for specifying the encapsulation method used for specific types of media?

Namakan lapisan dalam OSI model yang bertanggungjawab dalam menentukan kaedah pengkapsulan yang digunakan untuk jenis media tertentu

- A. Application
Aplikasi
- B.** Transport
Transport
- C. Data link
Data link
- D. Physical
Fizikal

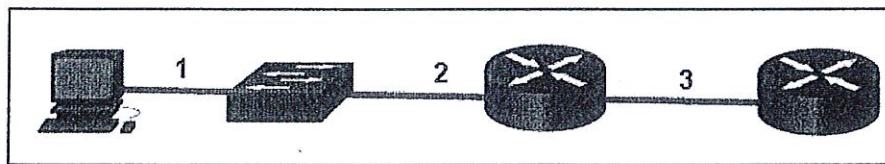


Figure 2A / Rajah 2A

CLO1
C2

5. Referring to Figure 2, the Personal Computer is connected to the console port of the switch. All the other connections are made through FastEthernet links. What types of UTP cables can be used to connect the devices?

Merujuk pada Rajah 2, sebuah PC telah disambungkan ke port konsol switch. Penyambungan yang lain dilakukan melalui sambungan "Fast Ethernet". Apakah jenis kabel UTP yang boleh digunakan untuk menyambung semua peranti?

- A. 1 - rollover, 2 - crossover, 3 - straight-through
1 - rollover, 2 - crossover, 3 - straight-through
- B. 1 - rollover, 2 - straight-through, 3 - crossover
1 - rollover, 2 - straight-through, 3 - crossover
- C.** 1 - crossover, 2 - straight-through, 3 - rollover
1 - crossover, 2 - straight-through, 3 - rollover
- D. 1 - crossover, 2 - rollover, 3 - straight-through
1 - crossover, 2 - rollover, 3 - straight-through

CLO2
C1

6. Identify the advantage of using fiber optic cabling rather than copper cabling?
Kenalpasti kebaikan menggunakan kabel gentian kaca berbanding kabel tembaga?
- A. It is usually cheaper than copper cabling.
Ia kebiasaannya lebih murah berbanding pengkabelan tembaga.
- B. It is able to be installed around sharp bends.
Ia boleh dipasang di sekeliling permukaan yang berliku
- C. It is easier to terminate and install than copper cabling.
Ia lebih mudah ditamatkan dan dipasang berbanding pengkabelan tembaga.
- (D) It is easy to carry signals much farther than copper cabling.
Ia mampu membawa signal lebih jauh berbanding pengkabelan tembaga.

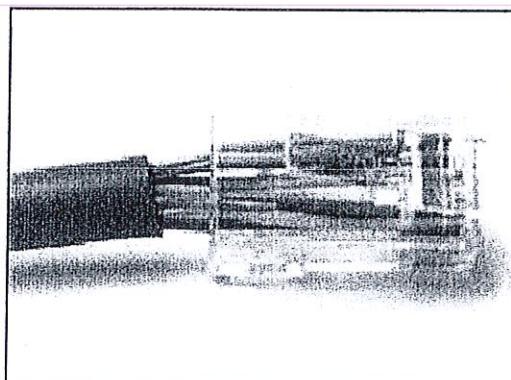


Figure 3A / Rajah 3A

CLO2
C3

7. Referring to Figure 3A, identify the mistake with the termination?

Merujuk pada Rajah 3A, kenalpasti kesilapan pada "termination"?

- A. The jack used is an RJ-11 connector instead of an RJ-45 connector.
Jack yang digunakan ialah penyambung RJ-11 berbanding penyambung RJ-45.
- (B) The cable is not shielded.
Kabel yang digunakan tidak dilindungi.
- C. The untwisted length of each wire is too long.
Ukuran tidak berpintal pada setiap wayar terlalu panjang.
- D. The wires are too thick for the connector that is used.
Wayar terlalu tebal untuk digunakan oleh penyambung.

CLO1

C1

8. Select the network migration technique ~~encapsulates IPv6 packets inside IPv4 packets to carry them over IPv4 network infrastructures.~~

Pilih teknik pemindahan 'encapsulate' paket IPv6 di dalam paket IPv4 untuk membawanya menggunakan infrastruktur rangkaian IPv4.

- (A) Encapsulation
'Encapsulation'
- B. Translation
'Translation'
- C. Dual Stack
'Dual-stack'
- D. Tunneling
'Tunneling'

CLO1

C2

9. Which of the following explain the concept of loopback IP address?

Antara berikut yang manakah menerangkan tentang konsep loopback dalam alamat IP?

- A. Used by router for default gateway.
Digunakan oleh router sebagai default gateway.
- B. Used by a host to send a packet to itself.
Digunakan oleh hos untuk menghantar packet kepada diri sendiri.
- C. Confirmation sent back by a receiver during communication in a network.
Pengesahan yang dihantar semula oleh penerima dalam komunikasi rangkaian.
- (D.) A message broadcasted by a device to request for IP address and MAC addresses.
Mesej yang dihantar oleh peranti kepada semua peranti lain untuk mendapatkan IP address dan MAC address.

CLO2
C1

10. Determine the prefix notation for the subnet 255.255.255.224.
Tentukan tata tanda prefik untuk subnet 255.255.255.224.

- A. /25
- B. /26
- C. /27
- D. /28

CLO2
C2

11. On a VLSM network, which mask should you use on point-to-point WAN links in order to reduce the waste of IP addresses?

Pada rangkaian VLSM, "mask" yang manakah perlu digunakan bagi hubungan "point-to-point" WAN bagi mengurangkan pembaziran alamat IP?

- A. /27
- B. /28
- C. /29
- D. /30

CLO2
C3

10101100.00011110.10000000.00010001

12. What would result if you translate this binary bit IP address into decimal IPv4 address?

Apakah keputusannya jika anda terjemah alamat IP bit binari ini kepada alamat IPv4 decimal?

- A. 172.30.128.16
- B. 172.30.128.17
- C. 173.30.128.18
- D. 173.30.128.19

CLO1

13.

C1

```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
ROUTER1(config)#
```

Figure 4A/Rajah 4A

From the Figure 4A above, find the command that has been used.

Merujuk Rajah 4A di atas, dapatkan arahan yang telah digunakan

- A. copy running-config startup-config
- B. Hostname
- C. Show
- D. Motd

CLO1

14.

C2

Host A needs to learn the MAC address of Host B, which is on the same LAN segment. A message has been sent to all the hosts on the segment asking for the MAC address of Host B. Host B responded with its MAC address and all other hosts disregard the request.

Hos A perlu dapatkan maklumat alamat MAC Hos B , iaitu pada segmen LAN yang sama . Mesej telah dihantar kepada semua hos pada segmen yang meminta alamat MAC Hos B. Hos B menjawab dengan alamat MAC dan semua hos yang lain tidak mengambil kira permintaan itu

Based on the above statement, which protocol is used in this scenario?

Berdasarkan pernyataan di atas, apakah protokol yang digunakan?

- A. Address Resolution Protocol (ARP)
- B. Dynamic Host Configuration Protocol (DHCP)
- C. Domain Name Service (DNS)
- D. File Transfer Protocol (FTP)

CLO2
C1

15. Based on the output below, identify the error from the message displayed.

Berdasarkan output di bawah, kenalpasti kesalahan daripada mesej tersebut.

Router#show serial 0/0

^

% Invalid input detected at '^' marker.

A. You need to be in user exec mode.

Anda perlu berada di dalam mod "user"

B.

You cannot have a space between serial and 0/0.

Tidak boleh ada ruang diantara serial dan 0/0.

The router does not have a serial0/0 interface.

Router tersebut tidak mempunyai antaramuka sesiri 0/0

D.

Part of the command is missing.

*Sebahagian daripada arahan hilang.*CLO2
C2

16. Choose the right command for an administrator to see a message when login into the router.

Pilih arahan yang betul untuk seorang pentadbir melihat mesej semasa log masuk ke dalam router.

A. message banner motd

B.

banner message motd

C.

banner motd.

D.

message motd

CLO2
C3

17. The Corporate router receives an IP packet with a source IP address of 192.168.214.20 and a destination address of 192.168.22.2. Refer to the output of the Corporate router below, what will the router do with this packet?

Router Corporate menerima peket IP dengan alamat IP sumber 192.168.214.20 dan alamat IP destinasi 192.168.22.2. Merujuk pada hasil akhir router Corporate di bawah, apakah yang akan dilakukan oleh router terhadap peket ini?

```
Corp#sh ip route
[output cut]
R 192.168.215.0 [120/2] via 192.168.20.2, 00:00:23, Serial0/0
R 192.168.115.0 [120/1] via 192.168.20.2, 00:00:23, Serial0/0
R 192.168.30.0 [120/1] via 192.168.20.2, 00:00:23, Serial0/0
C 192.168.20.0 is directly connected, Serial0/0
C 192.168.214.0 is directly connected, FastEthernet0/0
```

- A. The packet will be discarded.
Peket akan dimusnahkan
- B. The packet will be routed out the S0/0 interface.
Peket akan diarahkan ke antaramuka S0/0.
- C. The router will broadcast looking for the destination.
Router akan menyiarkan untuk destinasi.
- D. The packet will be routed out the Fa0/0 interface.
Peket akan diarahkan ke antaramuka Fa0/0

CLO1
C1

18. Identify the common Application Layer protocol.
Kenalpasti protokol umum di Lapisan Aplikasi.

- A. HTTP
- B. TCP
- C. IP
- D. UDP

CLO1

C2

19. Choose the **CORRECT** description for UDP communication.

*Pilih penerangan yang **BETUL** mengenai komunikasi UDP.*

- A. Provide a dedicated protocol to send email within local network
Menyediakan protokol khas untuk menghantar emel dalam rangkaian setempat
- (B)**. Provide handshake connection to make sure data sent is received by receiver
Menyediakan sambungan handshake memastikan data dihantar akan diterima oleh penerima
- C. A connectionless or stateless connection suitable for media streaming
Jenis connectionless atau stateless sesuai untuk media streaming
- D. Use a special packet that need to be sent before connection start to control network congestion.
Menggunakan peket khas yang perlu dihantar sebelum sambungan mula mengawal kesesakan rangkaian.

CLO1

C2

20. What is the function of the DNS server?

Apakah fungsi pelayan DNS?

- (A)**. It maps the IP address to the MAC address.
Memadankan alamat IP kepada alamat MAC.
- B. It translates a computer or domain name to the associated IP address.
Menterjemahkan komputer atau nama domain kepada alamat IP
- C. It manages the domain that clients are assigned to.
Menguruskan domain yang ditetapkan kepada pelanggan.
- D. It accepts HTTP requests from clients.
Menerima permintaan daripada pelanggan.

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

This section consists of **FOUR (4)** structured questions. Answer **ALL** questions.

ARAHAN:

Bahagian ini mengandungi EMPAT (4) soalan berstruktur. Jawab SEMUA soalan.

QUESTION 1**SOALAN 1**

CLO1
C1

- (a) (i) List **FOUR (4)** advantages of networking in daily life.

Senaraikan EMPAT (4) kelebihan rangkaian dalam kehidupan sehari-hari

[2 Marks]
[2 Markah]

CLO1
C1

- (ii) State **ONE (1)** difference between viruses and worms.

Nyatakan SATU (1) perbezaan di antara virus dan worm

[2 Marks]
[2 Markah]

CLO1
C1

- (b) (i) Referring to Figure B1, name the type of twisted pair cable used between each device.

Merujuk kepada Rajah B1. Namakan jenis kabel terpiuh yang digunakan antara setiap peralatan.

[2 Marks]
[2 Markah]

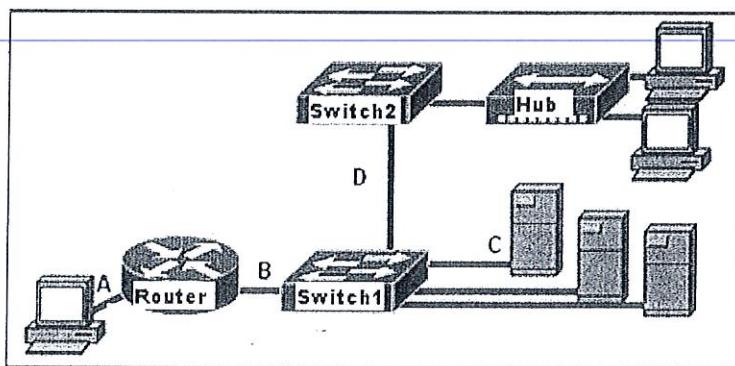


Figure B1 / Rajah B1

CLO1 C2	(ii) Define bandwidth and throughput. <i>Takrifkan lebar jalur dan throughput.</i>	[2 Marks] [2 Markah]
CLO1 C1	(c) (i) Explain the needs for subnetting a network. <i>Jelaskan keperluan untuk "subnetting" sesuatu rangkaian.</i>	[2 Marks] [2 Markah]
CLO1 C2	(ii) Give TWO (2) examples of Class A and Class C private IP address. <i>Berikan DUA (2) contoh alamat IP persendirian Kelas A dan Kelas C.</i>	[2 Marks] [2 Markah]
CLO1 C1	(d) (i) List TWO(2) functions of ARP <i>Senaraikan DUA(2) fungsi ARP.</i>	[2 Marks] [2 Markah]
CLO1 C2	(ii) Predict the effect if ARP is not involve in packet transmission. <i>Jangkakan kesan yang berlaku sekiranya ARP tidak terlibat dalam transmisi paket.</i>	[2 Marks] [2 Markah]
CLO1 C1	(e) (i) (a) List FOUR(4) common Application Layer protocol. <i>Senaraikan EMPAT(4) protokol lapisan aplikasi.</i>	[2 Marks] [2 Markah]
CLO1 C1	(i) (b) Name the TWO (2) common networking model standard. <i>Namakan DUA (2) standard model rangkaian yang selalu digunakan.</i>	[2 Marks] [2 Markah]

CLO1
C2

- (ii) Differentiate between HTTP and HTTPS.

Bezakan di antara HTTP dan HTTPS.

[2 marks]
[2 markah]

QUESTION 2

SOALAN 2

CLO2
C2

- (a) (i) Explain TWO (2) example of wireless media in networking.

Terangkan DUA (2) contoh media tanpa wayar dalam rangkaian.

[2 Marks]
[2 Markah]

CLO2
C3

- (ii) Illustrate a UTP cable physical characteristic.

Gambarkan ciri-ciri fizikal kabel UTP.

[2 Marks]
[2 Markah]

CLO2
C1

- (b) (i) Unicast is a method used by IPv4 to communicate. State another TWO (2) types of communication method used by IPv4.

Unicast adalah cara komunikasi IPv4. Nyatakan DUA (2) lagi cara komunikasi yang digunakan oleh IPv4.

[2 Marks]
[2 Markah]

PC IP address: 10.82.1.16

Subnet Mask: 255.255.255.0

CLO2
C3

- (ii) Based on the information above, identify the network address.

Berdasarkan maklumat di atas, kenalpasti alamat rangkaian.

[2 Marks]
[2 Markah]

- CLO2 (c) (i) Write the command to display “Welcome to Router 1” using IOS command line interface.

Tulis arahan yang memaparkan “Welcome to Router 1” menggunakan command line interface dalam IOS.

[2 Marks]
[2 Markah]

- CLO2 (ii) Write **FOUR (4)** examples of IOS command and the short version of it.

*Tulis **EMPAT (4)** contoh arahan IOS dan singkatannya.*

[2 Marks]
[2 Markah]

QUESTION 3

SOALAN 3

- CLO1 (a) In cloud computing, a data center is a facility used to house computer system and other associated component. List down **THREE (3)** associated components that should be place in data center.

Dalam pengkomputeran awan, pusat data merupakan kemudahan yang digunakan untuk menempatkan sistem komputer dan komponen lain yang berkaitan.

*Senaraikan **TIGA (3)** komponen berkaitan yang perlu diletakkan di dalam pusat data.*

[3 Marks]
[3 Markah]

- CLO1 (b) Networking standard involve several other standard organization. List **THREE (3) organizations** that are involved in it.

*Standard rangkaian melibatkan beberapa standard organisasi. Senaraikan **TIGA (3)** organisasi yang terlibat.*

[3 Marks]
[3 Markah]

CLO1
C1

- (c) List THREE (3) advantages of using IPv6.

Senaraikan TIGA (3) kelebihan menggunakan IPv6.[3 Marks]
[3 Markah]CLO1
C1

- (d) (i) A router has access to four types of memory: RAM, ROM, NVRAM, and Flash. Explain TWO (2) application/processes used by ROM in a router.

Sebuah router mempunyai akses kepada empat jenis memori. RAM, ROM, NVRAM dan Flash. Terangkan DUA (2) aplikasi/proses yang digunakan oleh ROM di dalam router.[3 Marks]
[3 Markah]CLO1
C2

- (ii) There are several ways to access the CLI environment on a Cisco router. Explain TWO (2) common methods used.

Terdapat beberapa cara untuk mengakses persekitaran CLI pada sesebuah router CISCO. Terangkan DUA (2) kaedah yang biasa digunakan.[3 Marks]
[3 Markah]CLO1
C1

- (e) (i) Peer to Peer and Client server are types of network that commonly used to create a network connection. Describe what is Peer to Peer and Client Server Network?

Peer to Peer dan Client Server ialah jenis rangkaian yang selalu digunakan untuk menghasilkan hubungan rangkaian. Terangkan apakah Peer to Peer dan Client Server?[3 Marks]
[3 Markah]CLO1
C2

- (ii) Explain TWO (2) advantages of Client Server.

Terangkan DUA (2) kelebihan Pelayan Pelanggan.[3 Marks]
[3 Markah]

QUESTION 4***SOALAN 4***CLO2
C1

- (a) State the port number and function for HTTPS protocol.

Nyatakan nombor port dan fungsi protokol HTTPS.[3 Marks]
[3 Markah]CLO1
C1

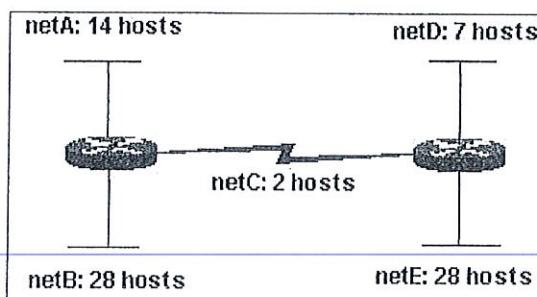
- (b) i. List THREE (3) types of Data Link frame.

Senaraikan TIGA (3) jenis frame "Data Link"[3 Marks]
[3 Markah]CLO2
C2

- ii. Based on the Figure B2 below, identify the network IP address and host IP address range for netA, netB and netD.

Berdasarkan Rajah B2, kenalpasti alamat IP rangkaian dan julat alamat IP hos bagi netA, netB dan netD.

Network Address: 192.168.10.0 / 24
Alamat Rangkaian: 192.168.10.0 / 24

**Figure B2 / Rajah B2**[3 Marks]
[3 Markah]

CLO2
C3

- (c) Change the following physical topology diagram in Figure B3 into its logical topology diagram with suitable IP address setting for the three classrooms.

Tukarkan gambarajah topologi fizikal dalam Rajah B3 kepada gambarajah topologi logical dengan alamat IP yang sesuai untuk tiga bilik darjah.

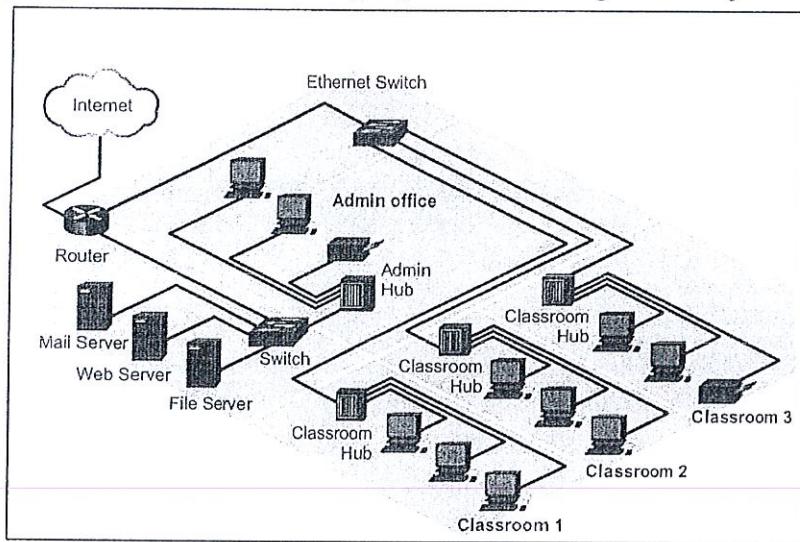


Figure B3 / Rajah B3

[3 marks]
[3 markah]

CLO2
C3

(d)

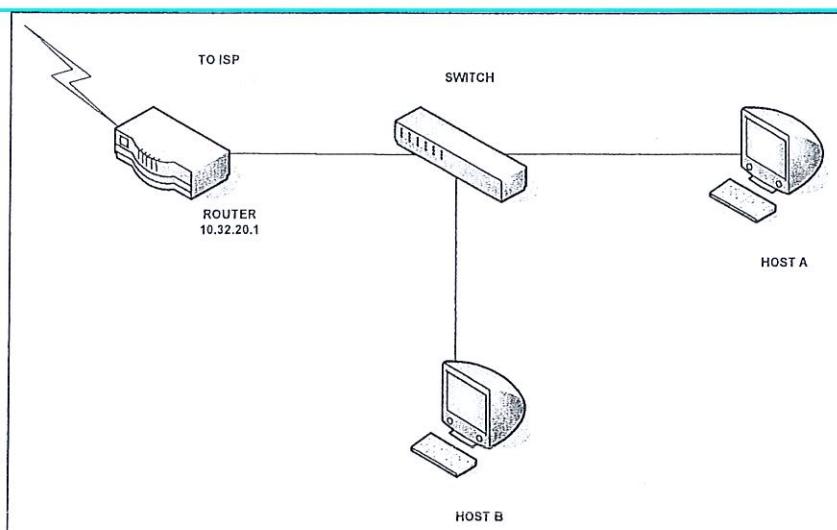


Figure 8 / Rajah 8

Referring to Figure B1 above, complete the Table 1 below.

Merujuk kepada Rajah B1, lengkapkan Jadual 1 di bawah.

Table B1 / Jadual B1

Host	IP Address	Subnet Mask	Default Gateway
HOST A			
HOST B			

[3 marks]

[3 markah]

END OF QUESTIONS
SOALAN TAMAT