

SULIT



**BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK
KEMENTERIAN PENDIDIKAN TINGGI**

JABATAN KEJURUTERAAN ELEKTRIK

PEPERIKSAAN AKHIR

SESI JUN 2016

EC301: COMPUTER NETWORK FUNDAMENTALS

TARIKH : 2 NOVEMBER 2016

TEMPOH : 11.15 AM – 1.15 PM (2 JAM)

Kertas ini mengandungi **TUJUH BELAS (17)** halaman bercetak.

Bahagian A: Objektif (20 soalan)

Bahagian B: Struktur (10 soalan)

Bahagian C: Esei (2 soalan)

Dokumen sokongan yang disertakan : Tiada

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

SECTION A: 20 MARKS**BAHAGIAN A: 20 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. What is the device designated to boost the signal when the signal loses its strength as it passes along a cable?

Apakah alat yang digunakan untuk meningkatkan isyarat apabila kekuatan isyarat berkurangan semasa melalui kabel?

- A. "Router"
- B. Gateway / Pintu Laluan
- C. Bridge / Jambatan Jaringan
- D. Repeater / Pengulang

- CLO1
C2 2. Which of the following is an advantage of using a client/server network over using a peer-to-peer network?

Yang manakah antara yang berikut adalah kelebihan menggunakan 'client/server network' berbanding 'peer-to-peer network'?

- A. A client/server network is simpler to set up.
'Client/server network' lebih mudah untuk dipasang.
- B. A client/server network allows for easier expansion.
'Client/server network' membolehkan penambahan dengan mudah.
- C. A client/server network does not require a network operating system.
'Client/server network' tidak memerlukan sistem operasi rangkaian.
- D. A client/server network is less expensive to set up.
'Client/server network' lebih mahal untuk dipasang.

CLO1
C1

3. In _____ topology, a central hub is used to connect the network together.

Dalam topologi _____, 'central hub' digunakan untuk menghubungkan rangkaian.

- A. Bus/ Bas.
- B. Ring/ Gelung
- C. Star/ Bintang
- D. Hybrid / Hibrid

CLO1
C2

4. The _____ is the physical path over which a message travels.

_____ adalah laluan fizikal untuk membolehkan perpindahan mesej.

- A. Protocol/ Protokol.
- B. Signal/ Isyarat.
- C. Channel/ Saluran.
- D. Media/ Medium.

CLO1
C2

5. Which layer is responsible for packet sequencing, acknowledgments, and requests for retransmission?

Lapisan yang mana bertanggungjawab untuk susunan dalam paket, maklumatbalas, dan permintaan untuk penghantaran semula?

- A. Physical / Fizikal.
- B. Data Link/ Data.
- C. Transport/ Pengangkutan.
- D. Network/ Rangkaian.

CLO1
C2

6. Why was the OSI model developed?

Mengapa model OSI dibangunkan?

- A. Manufactures disliked the TCP/IP protocol suite.
Pengeluar tidak menyukai protokol TCP/IP.
- B. The rate of data transfer was increasing exponentially.
Kadar penghantaran data meningkat secara perlahan-lahan.
- C. Standards were needed to allow any two systems to communicate.
Piawaian yang sesuai diperlukan bagi dua sistem untuk berkomunikasi.
- D. None of the above.
Semua berikut tidak berkaitan.

CLO1
C1

7. A device that forwards data packet from one network to another is called?

Peranti yang mengalihkan paket data dari satu rangkaian ke satu rangkaian dipanggil?

- A. Bridge / Jambatan Jaringan
- B. "Hub"
- C. Switch / Suis
- D. Repeater / Pengulang

CLO1
C2

8. What octets represent the network portion of a class C IP address?

Octet yang mana mewakili bahagian rangkaian daripada alamat kelas C?

- A. The last three/ Tiga yang terakhir
- B. The first three/ Tiga yang terawal
- C. The last two / Dua yang terakhir
- D. The first two/ Dua yang terawal

CLO3
C19. Which of the following is **NOT** a mode type data transmission?*Yang manakah antara berikut **BUKAN** jenis ragam penghantaran data?*

- A. Simplex transmission
Penghantaran simpleks
- B. Half-simplex transmission
Penghantaran separuh-simpleks
- C. Half-duplex transmission
Penghantaran separuh-dupleks
- D. Full-duplex transmission
Penghantaran dupleks penuh

CLO3
C1

10. What is the technology that has been used to modify analog signals to make them suitable for carrying data over a communication path?

Apakah teknologi yang digunakan untuk mengubahsuai isyarat agar ianya sesuai untuk membawa data melalui laluan komunikasi?

- A. Modem/ *Modem*
- B. Controller/ *Pengawal*
- C. Bandwidth/ *Lebar Jalur*
- D. Data modulation/ *Pemodulatan data*

CLO3
C111. Which of the following is **NOT** a data transmission media?*Yang manakah di antara berikut **BUKAN** media penghantaran data?*

- A. Twisted pair cable
Kabel pasangan berpintal
- B. Television antenna
Antenna televisyen
- C. Fiber optic cable
Kabel gentian optik
- D. Coaxial cable
Kabel sepaksi

CLO3
C212. Which statement is **TRUE** about point to point transmission?*Pernyataan yang manakah **BENAR** tentang penghantaran titik ke titik?*

- A. Data transmission involves only one transmitter and one receiver.
Penghantaran data melibatkan hanya satu penghantar dan satu penerima.
- B. Data transmission involves one transmitter and multiple receivers.
Penghantaran data melibatkan satu penghantar dan pelbagai penerima.
- C. Data transmission involves multiple transmitters and one receiver.
Penghantaran data melibatkan pelbagai penghantar dan satu penerima.
- D. Data transmission involves multiples transmitter and receiver.
Penghantaran data melibatkan pelbagai penghantar dan pelbagai penerima.

CLO3
C1

13. Where do ISPs get the public addresses that they assign to end user?

Di mana ISP mendapatkan alamat awam yang mereka agihkan kepada pengguna?

- A. ISPs create the addresses themselves
ISP mewujudkan alamat-alamat sendiri
- B. ISPs are assigned addresses through the RFC.
ISP mendapatkan alamat-alamat dari RFC.
- C. ISP obtains their addresses automatically.
ISP mendapatkan alamat-alamat secara automatik.
- D. ISPs obtains addresses block from registry organization.
ISP mendapatakan alamat-alamat dari pendaftar organisasi.

CLO3
C1

14. Select the TRUE statement regarding the ping and tracert command.

Pilih kenyataan yang BETUL mengenai arahan ping dan tracert.

- A. Tracert shows each hop; while ping shows destination reply.
Tracert menunjukkan setiap node; manakala ping menunjukkan maklumbalas destinasi.
- B. Tracert uses IP address; ping uses MAC address.
Tracert menggunakan alamat IP; manakala ping menggunakan alamat MAC.
- C. Both ping and tracert can show result in a graphical display.
Ping dan tracert boleh menunjukkan keputusan dalam paparan grafik.
- D. Ping shows whether the transmission is successful; tracert does not.
Ping menunjukkan samada penghantaran berjaya; manakala tracert tidak.

CLO3
C1

15. What are the advantages of wireless over wired technology?

Apakah kelebihan teknologi tanpa wayar berbanding teknologi dengan wayar

- i. More secure
Lebih selamat
 - ii. Ease of adding additional device
Mudah menambah alatan tambahan
 - iii. Longer range
Jarak yang lebih besar
 - iv. Anytime, anywhere connectivity
Hubungan bila-bila masa, di mana sahaja
- A. i and iii
 - B. ii and iii
 - C. ii and iv
 - D. iii and iv

CLO3
C1

16. Choose the best statement about the importance of security in wireless network.

Pilih pernyataan yang tepat tentang kepentingan keselamatan dalam rangkaian tanpa wayar.

- A. Wireless networks are typically slower than wired networks.
Rangkaian tanpa wayar selalunya lebih perlahan daripada rangkaian dengan wayar
- B. Televisions and other devices can interfere with wireless signals.
Televisyen dan alatan lain boleh menyebabkan gangguan kepada isyarat tanpa wayar
- C. Wireless networks broadcast data over a medium that allows easy access.
Rangkaian tanpa wayar menyebarkan data melalui perantaraan yang mudah dicapai.
- D. Environmental factors such as thunderstorms can affect wireless networks.
Faktor persekitaran seperti rebut petir boleh mengganggu rangkaian tanpa wayar

CLO3
C1

17. What type of attacks best described the situation when a hacker contacts you by phone or email and attempts to acquire your passwords?

Apakah jenis serangan untuk menggambarkan keadaan apabila penggodam menghubungi anda melalui telefon atau email dan cuba mendapatkan kata lauan anda?

- A. Bugging
Pepijat
- B. Phishing
Phishing
- C. Spamming
Spamming
- D. Vishing
Vishing

CLO3
C1

18.

A file is downloaded from the internet. After the user opens the downloaded file, the user's hard drive crashes and all information on the computer is lost.

Suatu fail telah dimuat turun dari internet. Selepas pengguna membuka fail yang dimuat turun tersebut, pemacu keras pengguna mengalami kerosakan dan semua maklumat pada komputer telah hilang.

Based on statement above, what type of attack occurred?

Berdasarkan pernyataan di atas, apakah jenis serangan yang telah berlaku?

- A. Worm
Cecacing
- B. Virus
Virus
- C. Spyware
Spyware
- D. Trojan Horses
Trojan Horses

CLO3
C1

19. Security threats from network intruders can come from both _____ and external sources.

Ancaman keselamatan daripada penceroboh rangkaian boleh diundang dari dua sumber iaitu _____ dan luaran.

- A. Firewall
Firewall
- B. Internal
Dalam
- C. Resource
Sumber
- D. Devices
Peranti

CLO3
C3

20. You work as a senior technician in the IT department. A trainee approaches you with a question. He needs to know which command line utility displays the Media Access Control (MAC) address of a Windows XP computer. How would you answer?

Anda bekerja sebagai juruteknik kanan di Jabatan IT. Seorang pelatih A telah menghampiri anda dengan satu persoalan. Pelatih A itu ingin mengetahui arahan utiliti bagi memaparkan Media Access Control (MAC) dengan menggunakan sistem pengoperasian komputer Windows XP. Bagaimana anda membantu pelatih A itu?

- A. ipconfig /release
- B. ipconfig /all
- C. ipconfig /renew
- D. tracert /all

SECTION B: 30 MARKS

BAGIAN B: 30 MARKAH

INSTRUKSI:

This section consists of **TEN (10)** structured questions. Answer **ALL** questions.

PANDUAN:

Bagian ini mengandungi **SEPULUH (10)** soalan berstruktur. Jawab **SEMUA** soalan.

QUESTION 1

State **THREE (3)** advantages of peer-to-peer network.

JAWAPAN 1

Senaraikan **TIGA (3)** kelebihan rangkaian peer-to-peer.

[3 marks]

[3markah]

QUESTION 2

Explain briefly the functions of the following LAN connectivity hardware:

- i. Repeater
- ii. Bridge
- iii. Router

JAWAPAN 2

Jelaskan dengan ringkas fungsi 'LAN connectivity hardware' berikut:

- i. Repeater
- ii. Bridge
- iii. Router

[3 marks]

[3 markah]

CLO2 QUESTION 3

C2

Differentiate between logical address and physical address.

SOALAN 3

Bezakan antara alamat logikal dan alamat fizikal.

[3 marks]

[3 markah]

CLO2 QUESTION 4

C1

State **TWO (2)** functions of transport layer.

SOALAN 4

Nyatakan **DUA (2)** fungsi lapisan pengangkutan.

[3 marks]

[3 markah]

CLO3 QUESTION 5

C2

State **THREE (3)** differences between fibre optic cable and twisted pair cable.

QUESTION 5

Nyatakan **TIGA (3)** perbezaan di antara kabel gentian optik dan kabel pasangan berpintal.

[3 marks]

[3 markah]

QUESTION 6

List **THREE (3)** main communication transmission flaws which can affect data flows.

SOALAN 6

Senaraikan **TIGA (3)** kelemahan utama penghantaran isyarat komunikasi yang bolehjejaskan isyarat data.

[3 marks]

[3 markah]

QUESTION 7

List **THREE (3)** options of ISP (Internet Service Provider) connection for typical business users.

SOALAN 7

Senaraikan **TIGA (3)** pilihan untuk penyambungan ISP (Internet Service Provider) bagi pengguna perniagaan.

[3 marks]

[3 markah]

QUESTION 8

Give an application scenario for each of the network categories below:

- i. WPAN
- ii. WLAN
- iii. WWAN

SOALAN 8

Senaraikan senario untuk setiap kategori 'network' berikut:

- i. WPAN
- ii. WLAN
- iii. WWAN

[3 marks]

QUESTION 9

List **THREE (3)** security tools and applications used in securing a network.

SOALAN 9

Senaraikan **TIGA (3)** perisian keselamatan dan aplikasi yang digunakan untuk menjamin keselamatan rangkaian.

[3 marks]

[3 markah]

CLO 3
C1

QUESTION 10

You have a user who cannot connect to a network. What is the first thing you could check to determine the cause of the problem?

CLO2
C2

SOALAN 10

Anda mempunyai seorang pengguna yang tidak dapat masuk ke rangkaian. Apakah yang mula-mula anda periksa untuk menentukan punca masalah tersebut?

[3 marks]

[3 markah]

SECTION C: 50 MARKS

BAHAGIAN C: 50 MARKAH

INSTRUCTION:

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

ARAHAN:

Bahagian ini mengandungi **DUA (2)** soalan esei. Jawab **SEMUA** soalan.

QUESTION 1

SOALAN 1

CLO2
C1

(a) Define the following terms:

Berikan maksud bagi istilah-istilah di bawah:

(i) Network

[3 marks]

[3 markah]

(ii) Node

[3 marks]

[3 markah]

CLO2
C2

(b) Identify the layers 5 and 6 in an Open System Interconnection (OSI) model. State the protocol functions for each layer.

Kenalpasti lapisan 5 dan 6 dalam model Open System Interconnection (OSI).

Nyatakan fungsi protocol bagi setiap lapisan tersebut.

[6 marks]

[6 markah]

CLO2
C2

(c) State **THREE (3)** factors that can affect/distort data signals.

*Nyatakan **TIGA (3)** faktor-faktor yang boleh mempengaruhi isyarat data.*

[3 marks]

[3 markah]

CLO2
C2

(d) State the differences of function between straight-through cable and cross-over cable and give **ONE (1)** example for each cable.

*Nyatakan perbezaan fungsi di antara kabel straight-through cable dan cross-over cable and berikan **SATU (1)** contoh setiap kabel.*

[6 marks]

[6 markah]

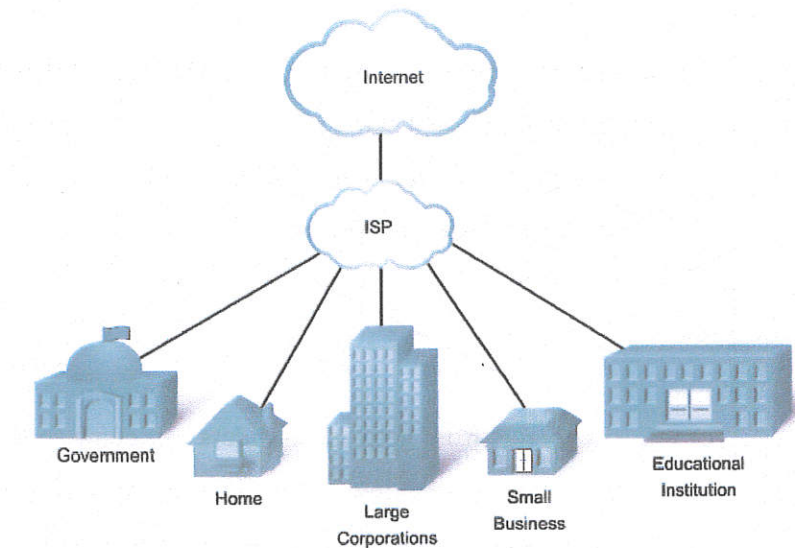


Figure C1: ISP connection.

CLO1
C1

(e) **Figure C1** shows the relationship between Internet and Internet Service Provider (ISPs). State **FOUR (4)** responsibilities of ISP for the Internet connection.

*Rajah C1 di atas menunjukkan hubungan di antara Internet dan Pembekal Perkhidmatan Internet. Nyatakan **EMPAT (4)** tanggungjawab ISP untuk sambungan Internet.*

[4 marks]

[4 markah]

QUESTION 2

SOALAN 2

- CLO1
C1 (a) Define wireless technology and state **THREE (3)** examples of wireless technology communication.

Takrifkan teknologi tanpa wayar dan nyatakan TIGA (3) contoh aplikasinya.

[5 marks]

[5 markah]

- CLO3
C2 (b) Differentiate between WPAN, WLAN and WWAN in terms of coverage, performance and applications.

Berikan perbezaan di antara WPAN, WLAN dan WWAN dari segi kawasan liputan, keupayaan dan aplikasi.

[9 marks]

[9 markah]

- CLO3
C2 (c) Security threats from network intruders can come from both internal and external sources. Describe what internal and external threats of network are.

Ancaman keselamatan daripada penceroboh rangkaian boleh terhasil daripada sumber-sumber dalaman dan luaran. Jelaskan apakah maksud ancaman dalaman dan ancaman luaran rangkaian?

[6 marks]

[6 markah]

- CLO3
C2 (d) Identify **FIVE (5)** examples of utility software that help to troubleshoot network problem. State the function of the software you have listed.

Kenalpasti LIMA (5) perisian program utiliti yang membantu dalam mengenal pasti masalah sistem rangkaian. Nyatakan fungsi program utiliti perisian yang disenaraikan.

[5 marks]

[5 markah]

SOALAN TAMAT