

SULIT



BAHAGIAN PEPERIKSAAN DAN PENILAIAN  
JABATAN PENDIDIKAN POLITEKNIK  
KEMENTERIAN PENDIDIKAN TINGGI

JABATAN TEKNOLOGI MAKLUMAT & KOMUNIKASI

PEPERIKSAAN AKHIR  
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**DFN4133 : NETWORK PROGRAMMING**

**TARIKH : 08 APRIL 2018**  
**MASA : 8.30 PAGI - 10.30 PAGI (2 JAM)**

Kertas ini mengandungi **DUA PULUH (20)** halaman bercetak.

Bahagian A: Objektif (30 soalan)

Bahagian B: Struktur (2 soalan)

Dokumen sokongan yang disertakan : Tiada

**JANGAN BUKA KERTAS SOALANINI SEHINGGA DIARAHKAN**

(CLO yang tertera hanya sebagai rujukan)

SULIT



**SECTION A : 45 MARKS**  
**~~BAHAGIAN A : 45 MARKAH~~**

**INSTRUCTION:**

This section consists of **THIRTY (30)** objective questions. Mark your answers in the OMR form provided.

**ARAHAN :**

*Bahagian ini mengandungi **TIGA PULUH (30)** soalan objektif. Tandakan jawapan anda di dalam borang OMR yang disediakan.*

CLO1  
C1

1. The Transport Layer provides end-to-end communication services. Select **TWO (2)** primary Transport Layer protocols at present are:

*Transport Layer menyediakan komunikasi perkhidmatan end-to-end. Pilih **DUA (2)** Protocol Transport Layer yang utama ialah :*

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

CLO1  
C1

2. List the Java Network Programming applications.

*Senaraikan aplikasi bagi Pengaturcaraan Rangkaian Java.*

- |                    |                         |
|--------------------|-------------------------|
| i. RMI application | iii. CORBA              |
| ii. Games          | iv. Distributed systems |

- A. i,ii,iv
- B. i,ii
- C. ii,iii,iv
- D. i, ii, iii, iv

CLO1  
C1

3. There are two categories of layer protocols application: the user protocols that provide service directly to users and the support protocols that provide common system functions. Identify which of the following is **NOT** common Internet User Protocols

*Terdapat dua kategori bagi aplikasi layer protocol: user protocols yang menyediakan khidmat secara langsung kepada pengguna, dan support protocol yang menyediakan fungsi sistem yang biasa. Kenal pasti antara berikut yang **BUKAN** Internet User Protocols yang biasa.*

- A. Telnet
- B. FTP
- C. SMTP
- D. SNMP

CLO1  
C1

4. Identify the correct statement about networking theory.

- A. All Internet protocols use IP as the basic data transport mechanism.  
*Kesemua protocol rangkaian menggunakan IP sebagai asas penghantaran data.*
- B. Reliable data delivery is provided in the Internet protocol suite by Transport Layer protocols such as the Transmission Control Protocol (TCP).  
*Penghantaran data yang dipercayai ddalam suite protokol internet oleh Transport layer protocol seperti Transmission control Protocol(TCP).*
- C. Transport Layer connectionless service is provided by the User Datagram Protocol (UDP).  
*Transport Layer tanpa sambungan disediakan oleh User Datagram protocol(UDP).*
- D. All the Seven Layers can Communicate with the network.  
*Kesemua tujuh lapisan boleh berhubung dengan rangkaian.*

CLO1  
C2

5. Explain what is Java API and how does it fit into Java language.

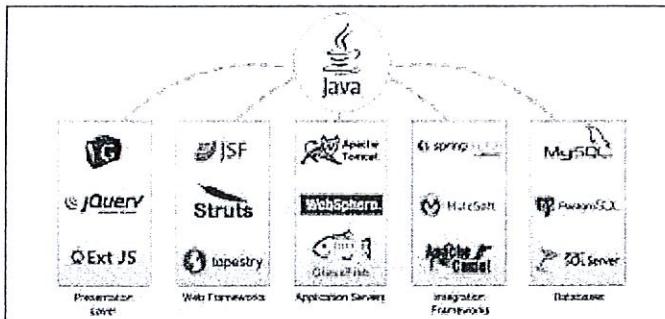
*Terangkan apakah Java API dan bagaimana ianya sesuai dengan aturcara Java.*

- A. The Java API is the set of classes included with the Java Development Environment. These classes are written using the Java language and run on the JVM.  
*Java API adalah kumpulan yang termasuk dalam lingkungan pembangunan java. Kelas ini di tulis menggunakan bahasa java dan dilaksanakan di JVM.*
- B. The Java API defines the syntax and semantics of the Java programming language for example primitive types, if/else blocks, the syntax of class declaration, exception syntax, variable scoping rules, and everything else necessary for the language to function.  
*The Java API mentakrifkan syntax dan semantics bagi Bahasa pengaturcaraan contohnya jenis primitive, if/else blocks, syntax kelas pengisytiharaan, syntax pengecualian, peraturan pembolehubah, dan segala keprluan yang digunakan untuk Bahasa berfungsi.*
- C. The Java API is a software that enables all the class used in Java.  
*API java merupakan perisian yang membolehkan kesemua kelas digunakan di dalam java.*
- D. The Java API is a programming that enable Java language communicating with the network.  
*API java merupakan pengaturcaraan yang membolehkan Bahasa Java berkomunikasi dalam rangkaian.*

CLO1  
C2

6. Analyze the following diagram and show the best statement that relates based on **Figure A1**.

*Analisis diagram dan tunjukkan pernyataan yang sesuai berkaitan merujuk pada Rajah A1.*



**Figure A1/Rajah A1**

- A. Java development tools / *Pembangunan Java*
- B. Java system properties / *Sistem Java properties*
- C. Java API / *API Java*
- D. Java network programming element / *Elemen rangkaian pengaturcaraan Java*

CLO1  
C1

7. Identify the function of the following codes in Figure A2.

*Kenal pasti fungsi kod berikut dalam Rajah A2.*

```

import java.net.*;

public class OReillyByName {

    public static void main (String[] args) {
        try {
            InetAddress address =
            InetAddress.getByName("www.oreilly.com");
            System.out.println(address);
        } catch (UnknownHostException ex) {
            System.out.println("Could not find www.oreilly.com");
        }
    }
}
    
```

**Figure A2/Rajah A2**

- A. The codes are dedicated to create new IP address for the URL  
*Kod melambangkan untuk mebina IP address yang baru dari URL.*
- B. The codes will create an InetAddress object for www.oreilly.com.  
*Kod akan membina InetAddress objek dari www.oreilly.com*
- C. The codes will convert address object into DNS  
*Kod akan di ubah alamat kepada DNS*
- D. The codes will display the url www.oreilly.com  
*Kod akan dipamerkan url www.oreilly.com*

- CLO1  
C2 8. Determine the output that the following codes in Figure A3 that will produce.

*Tentukan output yang akan dihasilkan dalam Rajah A3.*

```
import java.net.*;  
  
public class MyAddress {  
  
    public static void main (String[] args) {  
        try {  
            InetAddress address = InetAddress.getLocalHost();  
            System.out.println(address);  
        } catch (UnknownHostException ex) {  
            System.out.println("Could not find this computer's  
address.");  
        }  
    }  
}
```

**Figure A3/Rajah A3**

- A. The host name and its IP address. / *nama hos dan alamat IP*  
B. The host name / *Nama hos*  
C. The IP address / *Alamat IP*  
D. The IP location / *Lokasi IP*
- CLO2  
C1 9. Select from the following packages that supplies the input output stream classes in Java API.

*Pilih pakej yang menyalurkan class input output stream dalam Java API.*

- A. java.io.\*
- B. java.util.\*
- C. javax.net.\*
- D. java.sql.\*

- CLO2  
C1
10. Java BufferedWriter class is used to provide buffering for Writer instances. It makes the performance faster. It inherits Writer class. The buffering characters are used for providing the efficient writing of single arrays, characters, and strings. Which of the line number of code must be changed to apply the BufferedWriter in the following code in Figure A4.

*Kelas BufferedWriter dalam Java digunakan untuk menyediakan buffering untuk instance writer. Ia akan menyebabkan keupayaan menjadi lebih pantas. Ia mewarisi kelas Writer. Aksara buffering digunakan untuk menyediakan penulisan array satu dimensi, akasara dan rentatan menjadi lebih cekap. Yang manakah kod yang bernombor dalam Rajah A4 mesti ditukar untuk mengaplikasikan BufferedWriter.*

```
try{
    FileWriter fw=new FileWriter("D:\\testout.txt");..Line 1
    _____
    fw.write("Welcome to javaTpoint."); Line 2
    fw.close(); Line 3
}catch(Exception e){System.out.println(e);}
System.out.println("Success...");
```

Figure A4/Rajah A4

- A. Line 1
- B. Line 2
- C. Line 3
- D. Line 4

- CLO2  
C2
11. Choose any of these classes that is used to read characters in a file.

*Pilih mana-mana kelas yang digunakan untuk membaca aksara dalam fail.*

- A. FileReader
- B. FileWriter
- C. FileInputStream
- D. InputStreamReader

CLO2  
C3

12. Choose the correct explanation about UDP.  
*Pilih penerangan yang betul tentang UDP.*

- i. The UDP needs the port address to deliver the user datagram to the correct application process.  
*UDP memerlukan alamat port untuk menghantar user datagram ke proses aplikasi yang betul.*
  - ii. The UDP does not add anything to the services of IP except for providing process to process communication.  
*UDP tidak menambah apa-apa servis IP kecuali menyediakan proses untuk memproses komunikasi.*
  - iii. We need 2 socket addresses to use the services of UDP.  
*Kita memerlukan 2 alamat soket untuk digunakan servis UDP.*
  - iv. The UDP is a connectionless protocol.  
*UDP adalah sambungan tanpa protokol.*
  - v. UDP is an acronym for User Delivery Protocol  
*UDP melambangkan User Delivery Protokol.*
- A. i,ii,iii,iv  
B. i,ii  
C. ii,iii,iv  
D. i, ii, iii, iv, v

CLO1  
C2

13. In UDP, packets are encapsulated in \_\_\_\_.

*Dalam UDP, packet di kapsulkan dalam \_\_\_\_.*

- A. IP datagram  
B. TCP segment  
C. An Ethernet frame  
D. None

CLO1  
C3

14. Assuming you are programming as a client, write the code to open a socket to *time.nist.gov* on port 13:

*Andaikan anda adalah client, tuliskan kod untuk membuka satu socket kepada time.nist.gov untuk port 13.*

- A. Socket MyClient= new Socket("time.nist.gov", 13);  
B. Socket MyClient= new Socket(13, "time.nist.gov");  
C. ServerSocket MyClient= new ServerSocket("time.nist.gov", 13);  
D. ServerSocket MyClient= new ServerSocket(13,"time.nist.gov");

CL01  
C3

- 15 Read and understand the following codes in Figure A5 , then choose the correct comment for lines i, ii, iii or iv

*Baca dan faham kod dalam Rajah A5, kemudian pilih komen yang betul untuk line i,ii,iii atau iv.*

```

import java.net.*;
public class DatagramClient{
    private final static int PACKETSIZE = 100;
    public static void main( String args[] ){
        // Check the arguments
        if( args.length != 2 ){
            System.out.println( "usage: java DatagramClient
host port");
            return;
        }
        DatagramSocket socket = null;
        try{
            // i
            InetAddress host = InetAddress.getByName(
args[0]);
            int port          = Integer.parseInt( args[1] );
            socket = new DatagramSocket();
            // ii
            byte [] data = "Hello Server".getBytes();
            DatagramPacket packet = new
DatagramPacket(data,data.length,host, port);
            socket.send( packet );
            socket.setSoTimeout( 2000 );
            // iii
            packet.setData( new byte[PACKETSIZE] );
            // iv
            socket.receive( packet );
            System.out.println( new String(packet.getData()) );
        };
        }catch( Exception e ){
            System.out.println( e );
        }finally{
            if( socket != null )
                socket.close();
        }
    }
}

```

**Figure A5/Rajah A5**

- i Convert the arguments first, to ensure that they are valid  
*Tukar argument dahulu, untuk memastikan mereka sah.*
- ii Construct the datagram packet  
*Bina datagram packet*
- iii Prepare the packet for reception  
*Menyediakan paket untuk menerima*

- iv Wait for a response from the server  
*Menunggu tindakbalas dari server*

- A. i,ii,iii,iv
- B. i,ii
- C. ii,iii,iv
- D. ii, iii

CLO2      16. Distinguish the code between TCP and UDP socket programming in Java.  
C2

*Bezakan kod di antara pengaturcaraan rangkaian TCP dan UDP dalam Java.*

- A. Both are using Socket class  
*Kedua-duanya menggunakan kelas soket.*
- B. UDP is using Socket for sender application.  
*UDP menggunakan soket untuk meghantar aplikasi.*
- C. TCP is using ServerSocket class for recipient application.  
*TCP menggunakan kelas ServerSocket untuk menerima aplikasi.*
- D. UDP is using ServerSocket class for sender and recipient application  
*UDP menggunakan kelas ServerSocket untuk menghantar dan menerima aplikasi.*

CLO2      17. Determine the following code which enables the connection between host with IP number 192.168.1.21 and with 9021 as port number.  
C2

*Kenal pasti kod berikut yang boleh menghubungkan antara host dengan nombor IP 192.168.1.21 dengan nombor port 9021.*

Socket mySocket = \_\_\_\_\_;

- A. new Socket(192.168.1.21, 9021)
- B. new Socket("192.168.1.21", 9021)
- C. new Socket("192.168.1.21", "9021")
- D. new Socket("9021", "192.168.1.21")

- CLO2  
C3 18. Identify the step taken by the client after the hello server was done in the Mutual SSL Authentication context a.k.a the SSL handshake.

*Identifikasi langkah yang telah dilakukan oleh pelanggan selepas pelayan hello telah dibuat di dalam konteks Mutual SSL Authentication atau dikenali sebagai jabat tangan SSL.*

- The client sent hello message.  
*Pelayan menghantar message hello.*
- The client change cipher specification.  
*Pelayan menukar sifat cipher.*
- The client certificate verification  
*Pelayan mengiktiraf sijil.*
- The client execute the client key exchange  
*Pelayan menjana pertukaran kunci pelayan*

- CLO2  
C3 19.
- ```
DatagramSocket socket = new DatagramSocket(2000);
DatagramPacket packet = new DatagramPacket (new
byte[256], 256);
packet.setAddress ( InetAddress.getByName ( somehost )
);
packet.setPort ( 2000 );
.....
{
// Write data to packet buffer
.....
-----
.....
}
socket.close();
```

Figure A6 / Rajah A6

Show the **CORRECT** method to send packet to somehost based on snippet code **Figure A6** above.

*Tunjukkan metod yang BETUL untuk menghantar paket kepada "somehost" berdasarkan keratan kod Rajah A6 di atas.*

- send.socket (packet);
- send.socket (somehost);
- socket.send (packet);
- socket.send (somehost);

- CLO2      20 Translate the usage of the following constructor code based on Figure A7.

*Terangkan penggunaan kod pembina berikut berdasarkan Rajah A7.*

```
public Socket(String host, int port) throws UnknownException,  
IOException
```

**Figure A7 / Rajah A7**

- A. Create a TCP socket to the specified port on the specified host.  
*Membina TCP soket untuk spesifik port pada spesifik host.*
- B. Create a UDP socket to the specified port on the specified host.  
*Membina UDP soket untuk spesifik port pada spesifik host.*
- C. Create a HTTPS socket to the specified port on the specified host.  
*Membina HTTPS soket untuk specific port pada spesifik host.*
- D. Create a Secure Socket to the specified port on the specified host.  
*Membina Secure Socket untuk specific port pada spesifik host.*

- CLO1      21. Summarize the difference between TCP and UDP programming code.

*Ringkaskan perbezaan diantara kod pengaturcaraan TCP dan UDP.*

- A. The client can immediately send message to the server in UDP.  
*Pelanggan akan segera menghantar mesej kepada pelayan dalam UDP.*
- B. The server can immediately send message to the server in TCP  
*Pelayan akan segera meghantar mesej kepada pelayan dalam TCP.*
- C. The server can only send acknowledgement message when connection from a server is accepted.  
*Pelayan hanya menghantar mesej pengetahuan bila sambungan dari pelayan di terima.*
- D. The server can only send acknowledgement message when connection from a client is accepted  
*Pelayan hanya akan meghantar mesej pengetahuan bila sambungan dari pelanggan di terima.*

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CLO1<br>C3 | <p>22. Arrange the steps involved to make a client programming in TCP protocol.</p> <p><i>Susun langkah-langkah yang terlibat untuk memprogramkan pelanggan dalam protokol TCP.</i></p> <ul style="list-style-type: none"> <li>i. Clean Up<br/><i>Pembersihan</i></li> <li>ii. Open an input and output stream to the socket<br/><i>Membuka aliran kemasukan dan pengeluaran kepada soket</i></li> <li>iii. Open a socket<br/><i>Membuka soket</i></li> <li>iv. Read from and write to the socket according to the server's protocol.<br/><i>Membaca dan menulis soket mengikut protokol pelayan.</i></li> </ul> <p>A. i, ii, iii, iv<br/>B. iii, ii, iv, i<br/>C. ii, iii, iv, i<br/>D. iv, ii, iii, i</p> |
| CLO2<br>C2 | <p>23. Choose a class that initiates a TCP connection to the server by creating a socket object.</p> <p><i>Pilih Kelas yang memulakan hubungan TCP kepada pelayan dengan mewujudkan soket objek.</i></p> <ul style="list-style-type: none"> <li>A. Server Socket / Soket Pelayan</li> <li>B. User Socket / Soket Pengguna</li> <li>C. Client Socket / Soket Pelanggan</li> <li>D. Media Socket / Soket Media</li> </ul>                                                                                                                                                                                                                                                                                     |
| CLO2<br>C2 | <p>24. Identify the following code to get currently connected remote port.</p> <p><i>Kenalpasti kod berikut untuk mendapatkan "port remote" sambungan terkini.</i></p> <ul style="list-style-type: none"> <li>A. int getPort()</li> <li>B. int getLocalPort()</li> <li>C. InetAddress getInetAddress()</li> <li>D. InetAddress getLocalInetAddress()</li> </ul>                                                                                                                                                                                                                                                                                                                                             |

CLO2  
C2

25. Interpret the correct syntax for listen() in system call.

*Tafsirkan sintak yang tepat untuk listen() dalam system call.*

A.

```
public void listenSocket(){
    try{
        server = new ServerSocket(4444);
    } catch (IOException e) {
        System.out.println("Could not listen on
port 4444");
        System.exit(-1);
    }
}
```

B.

```
public void listenSocket(){
    try{
    } catch (IOException e) {
        System.out.println("Could not listen on
port 4444");
        System.exit(-1);
    }
}
```

C.

```
public void listenSocket(){
    try{
        server = new Server ();
    } catch (IOException ) {
        System.out.println("Could not listen on
port 4444");
        System.exit(-1);
    }
}
```

D.

```
public void listenSocket(){
    try{
        new Sock();
    } catch (Exception e) {
        System.out.println("Could not listen on
port 4444");
        System.exit(-1);
    }
}
```

- CLO2      26. Select which of the following creates a MulticastSocket and then invoking the joinGroup

*Yang manakah antara berikut mencipta MulticastSocket kemudian memanggil joinGroup*

A. 

```
InetAddress = InetAddress.getByName("228.5.6.7");
MulticastSocket s = new MulticastSocket(6789);
```

B. 

```
InetAddress group =
InetAddress.getByName("228.5.6.7");
s.joinGroup(group);
```

C. 

```
InetAddress group =
InetAddress.getByName("228.5.6.7");
MulticastSocket s = new MulticastSocket(6789);
s.joinGroup();
```

D. 

```
InetAddress group =
InetAddress.getByName("228.5.6.7");
s.join(group);
```

- CLO2      27. Identify the function of the following code in Figure A8.

*Kenalpasti fungsi yang dilaksanakan oleh kod dalam Rajah A8..*

```
Socket socket = new Socket("127.0.0.1", 5000)
```

Figure A8/Rajah A8

- A.     Socket communication  
*Soket berkomunikasi*
- B.     Open a socket connection  
*Membuka sambungan soket*
- C.     Closing the socket connection  
*Menutup sambungan soket.*
- D.     Read a connection to network.  
*Membaca sambungan rangkaian.*

- CLO2      28. Match the class and method used to read all different types of data from all different types of sources.

*Padankan kelas dan metod yang digunakan untuk membaca semua jenis data daripada semua jenis sumber yang berbeza.*

- A. InputStream and getInStream ()
- B. OutputStream and getOutputStream ()
- C. OutputStream and getOutput ()
- D. BufferedReader and GetBufferReader ()

- CLO1      29. DatagramPacket packet = new DatagramPacket(outbuf, outbuf.length, groupAddr, port);

**Figure A9/ Rajah A9**

Identify the groupAddr in the code Figure A9.

*Tentukan groupAddr dalam keratan kod pada Rajah A9.*

- A. Port number
- B. Address number
- C. Length of address
- D. Host name

CLO1

C1

30. Predict the output for the following code based on Figure A 10:

Ramalkan output yang dikeluarkan dari keratan kod berdasarkan Rajah A 10:

```
public static void main(String[] args){  
    try{  
        InetAddress ip=InetAddress.getByName("www.javatpoint.com");  
  
        System.out.println("Host Name: "+ip.getHostName());  
        System.out.println("IP Address: "+ip.getHostAddress());  
    }catch(Exception e){System.out.println(e);}  
}
```

Figure A10/ Rajah A10

- A. IP Address: 206.51.231.148  
Host Name: www.javatpoint.com
- B. Host Name: www.javatpoint.com
- C. Host Name: www.javatpoint.com  
IP Address: 206.51.231.148
- D. IP Address: 206.51.231.148

**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 1***

CLO1  
C1

- (a) i. List **TWO (2)** layers of OSI Model

*Senaraikan DUA (2) layer dalam Model OSI*

[2 marks]  
[2 markah]

- ii. Define the acronym for JDK in Java and list **THREE (3)** Java Platforms.

*Apakah akronim bagi JDK dalam Java dan senaraikan TIGA (3) platform Java.*

[4 marks]  
[4 markah]

CLO1  
C2

- (b) i. Describe the advantages of layering in networking

*Terangkan kelebihan lapisan dalam rangkaian.*

[2 marks]  
[2 markah]

- ii. Explain **TWO (2)** security methods in network communication.

*Terangkan DUA (2) kaedah keselamatan dalam komunikasi rangkaian*

[3 marks]  
[3 markah]

CLO1  
C1

- (c) List **THREE (3)** classes in Filter Stream

*Senaraikan TIGA (3) kelas yang terdapat dalam Filter Stream*

[3 marks]  
[3 markah]

CLO2  
C2

- (d) Explain TWO (2) functions of common method in the InetAddressts.

*Terangkan DUA (2) fungsi kaedah dalam InetAddress .*

[4 marks]  
[4 markah]

CLO2  
C3

- (e) Using FileWriter class :

- i. Create object of new file by getting file name in string named “test.txt” using FileWriter class constructor.
- ii. Write “Welcome to Wonderful world” to the file.
- iii. Close the FileWriter Object.

*Menggunakan Kelas FileWriter:*

- i. Cipta satu file baru dengan mendapatkan dalam bentuk string bernama “text.txt” menggunakan Pembina kelas FileWriter.
- ii. Tuliskan “Welcome to Wonderful world” kepada file tersebut.
- iii. Tutup objek FileWriter

[4 marks]  
[4 markah]

CLO1  
C1

- (f) i. Define SSL or Secure Socket Layer.

*Define SSL atau Secure Socket Layer.*

[1 marks]  
[1 markah]

- ii. List TWO (2) types of cipher suite.

*Senaraikan DUA (2) jenis cipher suite.*

[2 marks]  
[2 markah]

**QUESTION 2*****SOALAN 2***CLO1  
C3

- (a) Interpret the usage of
- TWO (2)**
- classes in UDP.

*Tafsirkan kegunaan **Dua (2)** kelas dalam UDP*[3 marks]  
[3 markah]CLO2  
C2

- (b) Explain the function of the following codes in Figure B1:

*Terangkan fungsi bagi kod-kod di Rajah B1.*

```
DatagramSocket datagramSocket = new DatagramSocket(80); (1)
byte[] buffer = new byte[10];(2)
DatagramPacket packet = new DatagramPacket(buffer, buffer.length);(3)
datagramSocket.receive(packet);(4)
```

**Figure B1/ Rajah B1**[6 marks]  
[6 markah]CLO2  
C3

- (c) Write a code DatagramPacket to send a UDP packets from a client to a server. Given buffer and port number are :

*byte[] buffer = {10,23,12,31,43,32,24};port number : 57**Tuliskan kod DatagramPacket untuk menghantar paket UDP daripada**Client kepada pelayan. Diberi buffer :**byte[] buffer = {10,23,12,31,43,32,24};nomor port:57*[6 marks]  
[6 markah]CLO1  
C1

- (d) i. Define what is socket.

*Berikan takrifan socket.*

- ii. What are
- THREE (3)**
- differences TCP and UDP .

*Apakah **TIGA (3)** perbezaan antara TCP dan UDP.*[4 marks]  
[4 markah]

CLO1  
C2

- (e) Identify and explain THREE (3) System call for TCP socket programming

*Kenalpasti dan terangkan TIGA (3) System call untuk pengaturcaraan soket TCP*

[3 marks]  
[3 markah]

CLO2  
C2

- (f) Write a code on how to open socket:
- Connection of client for TCP.
  - As a server for TCP.

*Tuliskan kod bagaimana untuk membuka soket:*

- penyambungan untuk TCP*
- sebagai pelayan untuk TCP*

[4 marks]  
[4 markah]

CLO2  
C3

- (g) Based on the answer given in question 2(f-i) explain what does a socket consist of.

*Berpandukan jawapan pada soalan 2(f-i) terangkan apakah yang terkandung dalam penyambungan soket.*

[4 marks]  
[4 markah]

**SOALAN TAMAT**

