

SULIT



BAHAGIAN PEPERIKSAAN DAN PENILAIAN  
JABATAN PENDIDIKAN POLITEKNIK  
KEMENTERIAN PENDIDIKAN TINGGI

JABATAN TEKNOLOGI MAKLUMAT DAN KOMUNIKASI

PEPERIKSAAN AKHIR  
SESI JUN 2015

**DFC2013: PROGRAMMING FUNDAMENTALS**

TARIKH : 29 OKTOBER 2015  
MASA : 8.30 AM – 10.30 AM (2 JAM)

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Kertas ini mengandungi **DUA PULUH SATU (21)** halaman bercetak.

Bahagian A: Objektif (20 soalan)

Bahagian B: Struktur/Esei (4 soalan)

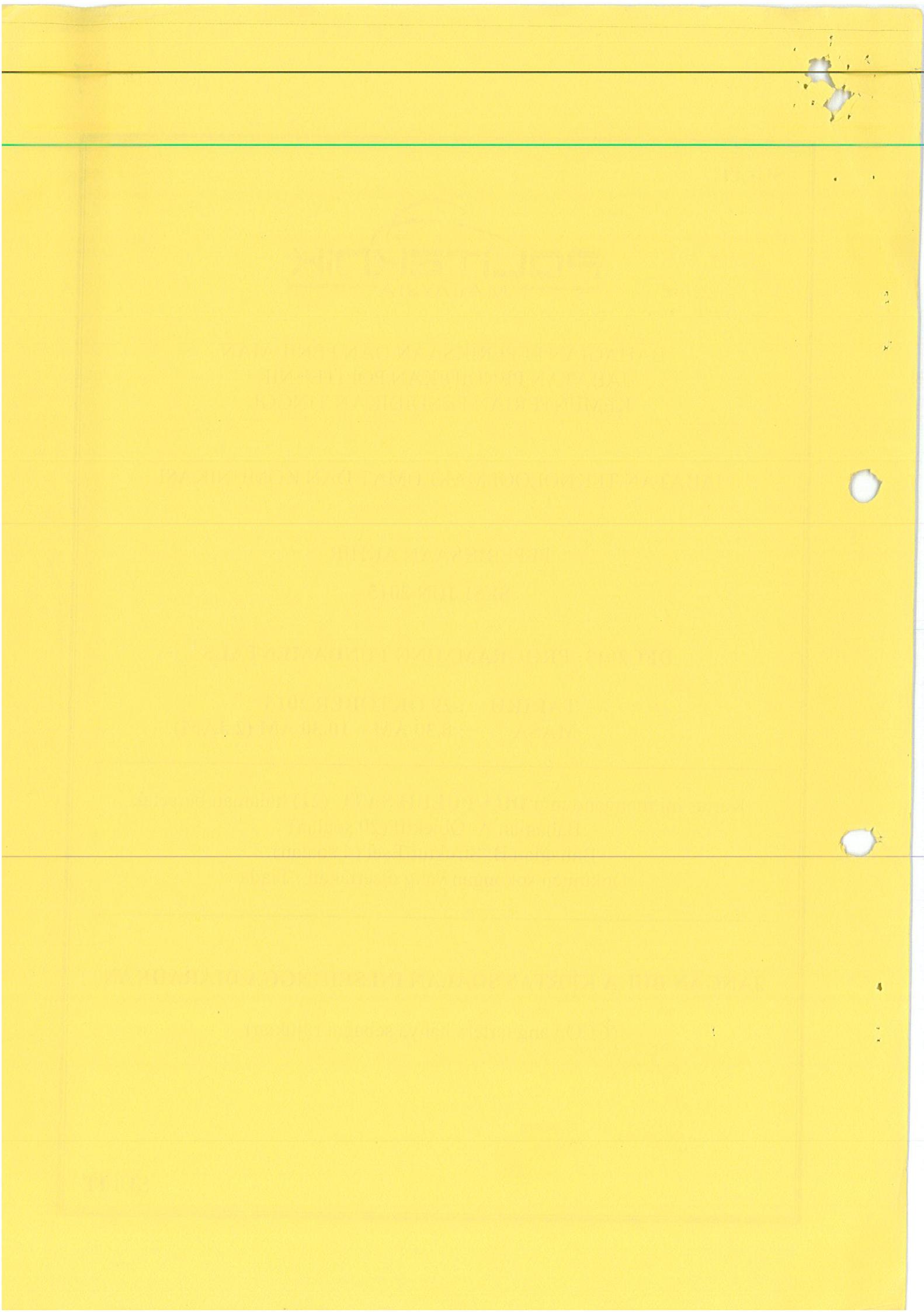
Dokumen sokongan yang disertakan : Tiada

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**JANGAN BUKA KERTAS SOALANINI SEHINGGA DIARAHKAN**

(CLO yang tertera hanya sebagai rujukan)

SULIT



**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. “There is an error during compiling process because a semi colon is missing at the end of a C++ programming language”  
*“Terdapat ralat semasa mengkompil aturcara kerana semicolon tidak diletakkan dipenghujung pernyataan bahasa pengaturcaraan C++”*

Identify the type of error for the above statement.

*Kenalpasti jenis ralat bagi pernyataan di atas.*

- |                                               |                                               |
|-----------------------------------------------|-----------------------------------------------|
| A. Run Time Error<br><i>Ralat Masa Larian</i> | C. Logical Error<br><i>Ralat Logical</i>      |
| B. Syntax Error<br><i>Ralat Sintak</i>        | D. Statement Error<br><i>Ralat Pernyataan</i> |

CLO1  
C2

2. Based on the picture below, identify the type of error occurred.  
*Berdasarkan rajah di bawah, tentukan jenis kesalahan yang berlaku.*

```
#include <iostream.h>

int main()
{
    float mark;

    cout << "Enter your mark: ";
    cin >> mark;
    if(mark > 50)

        cout << "fail";
    else
        cout<< "pass";

    return 0;
}
```

- A. Syntax error
- B. Logic error
- C. Run-time error
- D. Compile error

- CLO1    3. Which of following is the correct answer to display for the string “Welcome to Programming Language”?

*Kenalpasti jawapan yang betul untuk memaparkan perkataan “Welcome to Programming Language”?*

- A. `cin>>Welcome to Programming Language>>endl;`
- B. `cin>>”Welcome to Programming Language \n”;`
- C. `cout<< Welcome to Programming Language<<endl;`
- D. `cout<<”Welcome to Programming Language”<<endl`

- CLO1    4. What is the value of A in the following statements?  
C2                          *Apakah nilai A bagi pernyataan di bawah?*

```
int A, B, C;  
  
B = 10;  
C = 3;  
A = B * C + 3;
```

- A. 63
- B. 60
- C. 30
- D. 33

- CLO1    5. Which of the following is a selection control structure?  
C1                          *Yang mana satu struktur kawalan pemilihan?.*

- |          |              |
|----------|--------------|
| A. for   | C. if..else  |
| B. while | D. do..while |

- CLO1    6. Identify the correct syntax for a **for** loop statement.  
C1                          *Kenalpasti sintak yang betul untuk gelung for*

- A. `for (c=0; c<=5; c++)`
- B. `for (c=0; c<=6; c++);`
- C. `for (c==0; c<5; c++)`
- D. `for (c=0; c<5; c++);`

CLO1

7. What is the correct output if the input is W?

C2

*Kenalpasti output yang betul jika input yang dimasukkan adalah W?*

```
If (colour == 'R')  
    cout<<"RED";
```

- A. R
- B. W
- C. RED
- D. No output display

CLO2

8. What is the output of this program segment?

C1

*Apakah paparan output bagi segmen program di bawah?*

```
void main()  
{  
    int x=50;  
    if(x==100)  
        cout<<"x is 100";  
    cout<<x;  
}
```

- A. 50
- B. x is 100
- C. 100
- D. x is 50

CLO2

9. Identify the error in **while** loop for the statement below.

C2

*Kenalpasti ralat dalam pernyataan gelung while berikut.*

```
while (sum<=100)  
    sum=sum-30;
```

- A. The parentheses should be a curly brace.  
*Kurungan perlu ada kurungan "curly".*
- B. Quotation mark are required around sum = sum - 30;  
*Tanda "Quotation" perlu ada di antara pernyataan sum = sum - 30;*
- C. There should be a semicolon after while ( sum <= 1000 ).  
*Perlu ada koma bertitik selepas pernyataan while (sum< = 1000) ..*
- D. sum = sum - 30 should be sum = sum + 30 or else the loop may never end.  
*sum = sum - 30 harus menjadi sum = sum+ 30 atau gelung tidak akan berakhir .*

CLO2

C1

10. Which is the correct statement related to the declaration of the following array.

*Manakah pernyataan yang betul untuk mengistiharkan dan memberi nilai awalan bagi Array.*

```
int score[ ]={10,20,30,40};
```

- i. The size element of the array is 4  
*Saiz elemen bagi array adalah 4*
  - ii. Score[1] = 10;
  - iii. The type of each element is integer  
*Setiap elemen adalah berjenis integer*
  - iv. The name of the array is score  
*Nama array adalah score*
- A. i and ii only / *i dan ii sahaja*
  - B. iii and iv only / *ii dan iv sahaja*
  - C. i, iii and iv only / *i,iii dan iv sahaja*
  - D. ii, iii and iv only / *ii, iii dan iv sahaja*

CLO2

C2

11. The **array costnum** holds the following data:

*Tatasusunan costnum memegang data berikut:*

25.99	14.55	33.65	25.25	45.99	4.99	17.85
-------	-------	-------	-------	-------	------	-------

What is the value in the variable **costnum** after the following statement is executed?  
*Apakah nilai pembolehubah costnum selepas pernyataan berikut dilaksanakan*

```
costnum = cost[4];
```

- A. 4.99
- B. 25.25
- C. 33.65
- D. 45.99

CLO2

12. Based on the given structure, identify the objects

*Berdasarkan struktur yang diberi, kenalpasti objek-objek.*

C3

```
struct workerType{  
    int ID;  
}worker1,worker2;
```

- A. worker1, worker 2
- B. int ID
- C. workerType
- D. struct workerType

CLO1

13. Choose the **INCORRECT** statement that is related to function declaration*Pilih kenyataan yang **SALAH** mengenai pengisytiharan fungsi :*

C1

- A. function declaration is also called a function prototype  
*pengisytiharan fungsi juga dikenali sebagai fungsi prototaip*
- B. function declaration is terminated by the semicolon  
*pengisytiharan fungsi berakhir dengan semikolon*
- C. function declaration is similar to function call  
*pengisytiharan fungsi adalah sama dengan fungsi memanggil*
- D. function declaration must have the return type of the function  
*pengisytiharan fungsi mesti mempunyai jenis pulangan data bagi fungsi tersebut*

CLO1

14. Which is the **CORRECT** syntax for function declaration?*Di antara berikut, manakah sintak yang **BETUL** untuk pengisytiharan fungsi?*

C2

- A. return\_type function\_name(parameter list);
- B. return\_type function\_header(parameter list);
- C. function\_name(parameter list);
- D. return\_type (parameter list) function\_name;

Question 15 to 16 are based on the coding below.

Soalan 15 hingga 16 adalah berdasarkan aturcara di bawah.

```

1 #include <iostream.h>
2
3 int addition (int, int);
4
5 int main ()
6 {
7     int z;
8     z = addition (5,3);
9     cout << "The result is " << z;
10    return 0;
11 }
12
13 int addition (int a, int b)
14 {
15     int r;
16     r=a+b;
17     return (r);
18 }
19
20

```

CLO2

15. What is the arguments hold by **addition** function in the program above?

*Kenalpasti argument yang dipegang oleh fungsi addition dalam program di atas?*

- A. int a, int b
- B. int a, b
- C. 5,3
- D. a,b

CLO2

16. Line 3 shows the prototype of function addition. Which of the following describe this prototype?

*Baris ketiga menunjukkan prototaip untuk fungsi addition. Yang mana satu di antara berikut yang menunjukkan penjelasan mengenai prototaip tersebut?*

- A. The function will return the int value and accept two parameters of int type .  
*Fungsi tersebut akan memulangkan nilai integer dan menerima dua parameter dari jenis integer.*
- B. The prototype is declared to let the compiler knows that the function which is named as addition will be used in this program.  
*Prototaip ini diisyiharkan supaya compiler tahu terdapat fungsi yang dinamakan addition akan digunakan dalam program ini.*
- C. It will receive two arguments.  
*Ia akan menerima dua argumen.*
- D. The prototype is useful to get the sum of two numbers.  
*Prototaip ini amat berguna untuk mendapatkan hasil tambah dua nombor.*

- CLO2 17. Determine the output from the following program.  
C3 *Tentukan output daripada program berikut.*

```
#include <iostream>
using namespace std;

int sum(int a, int b = 20)
{
    int result;

    result = a + b;

    return (result);
}

int main ()
{
    int a = 100;
    int b = 200;
    int result;

    result = sum(a, b);
    cout << "Total value is :" << result << endl;

    result = sum(a);
    cout << "Total value is :" << result << endl;

    system("pause");
    return 0;
}
```

- A. Total value is :120  
Total value is :120
- B. Total value is :300  
Total value is :300
- C. Total value is :300  
Total value is :120
- D. Total value is :120  
Total value is :300

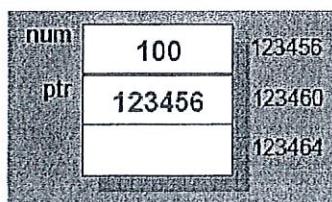
CLO2 18. What is the correct declaration for pointer?

C1 *Pilih pengisytiharaan yang betul untuk penuding?*

- A. int ptr\*;
- B. int \*ptr;
- C. int &ptr;
- D. int ptr&;

CLO2 19. Choose the **CORRECT** declaration based on the information given below.

C2 *Pilih pengisytiharan yang **BENAR** berdasarkan maklumat yang diberikan di bawah.*



- A. int ptr = 100;
- B. int \*ptr = &num;
- C. int ptr = 123456;
- D. int \*ptr = &123456;

- CLO2 20. Identify the output of the program below if the address of the variable **num** is 001145D  
C3 *Tentukan output bago kod program di bawah jika alamat bagi pembolehubah num ialah 001145D.*

```
#include <iostream>
using namespace std;

main()
{
    int num = 5;
    int *ptr;
    ptr = &num;

    cout<< num <<"\t";
    cout<< *ptr << endl;
    cout<< &num <<"\t";
    cout<< ptr << endl;
}
```

- A. 5                001145D  
001145D        5
- B. 5  
5  
001145D  
001145D
- C. 5                5  
001145D        001145D
- D. 5                001145D  
5                001145D

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

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

**ARAHAN:**

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

**QUESTION 1****SOALAN 1**

- CLO1 (a) What is syntax error?

*Apakah kesalahan sintak?*

[2 marks]  
[2 markah]

- CLO1 (b) (i) Identify the most suitable data types for the following variables.

*Kenalpasti jenis data yang paling sesuai bagi pembolehubah berikut.*

Variables	Data Type
money	
age	
name	
grade	

[2 marks]  
[2 markah]

- (ii) By using the answers in (b)(i), write the **syntax** to declare the variables.

*Dengan menggunakan jawapan anda dalam (b)(i), tuliskan sintak untuk mengisyiharkan pembolehubah di atas.*

[2 marks]  
[2 markah]

CLO1  
C2

- c) Answer the question based on Figure B1.

*Jawab soalan berdasarkan Rajah B1.*

```
int x,y;
x = 1;
y = 1;
while (x <=3)
{
    x = x + 1;
    y = y * x;
    cout << x << "\t" << y;
}
```

**Figure B1 / Rajah B1**

- i. How many times does program loops ?  
*Berapa kali program melakukan ulangan ?*
- ii. Write the output.  
*Tulis output.*

[ 4 marks ]  
[4 markah]CLO2  
C2

- d) Rewrite the segment code using
- do-while loop**
- .

*Tulis semula kod segmen menggunakan gelung do-while .*

```
int sum = 0;
while(n > 0)
{
    sum = sum + n;
    --n;
}
```

[ 2 marks ]  
[2markah]

CLO2  
C3

e) Based on Figure B2, write the output for the given input:

*Berdasarkan Rajah B2, tulis keluaran bagi input berikut:*

```
switch(no)
{
    case 1: no=1;
    break;
    case 2: no=2;
    break;
    case 3: no=3;
    case 4: no=4;
    break;
    default: cout<<"No = ";
}
cout <<no;
```

**Figure B2 / Rajah B2**

- i. no = 5
- ii. no = 3

[ 2 marks ]  
[2 markah]

**QUESTION 2****SOALAN 2**CLO2  
C1

- (a) Write the syntax to declare an array.

*Tulis sintak bagi pengisytiharan tatasusunan.*[ 2 marks ]  
[2markah ]CLO2  
C2

- (b) Write the C++ statements to...

*Tuliskan pernyataan C++ untuk...*

- i. declare an array **my\_array** of 10 elements of type **int**.
- ii. set the value of fifth element of array **my\_array** to 35.
- iii. access the value of tenth element of array **my\_array**.
- iv. variable name is matrix consist 5 rows and 5 column with data type of double.

[ 4 marks ]  
[4markah ]CLO2  
C3

- (c) Based on fragment code below, write the value for each statement.

*Berdasarkan kod fragmen, tulis nilai dari pernyataan di bawah.*

```
int number [3][4] = { {2,4,6,8},{3,6,9,12},{1,5,10,13} };
```

- i. cout<<number[2][3];
- ii. cout<<number[0][2];

[ 2 marks ]  
[2markah ]CLO1  
C1

- (d) Identify two types of function.

*Kenal pasti dua jenis fungsi.*[ 2 marks ]  
[2 markah]

- CLO1  
C2 (e) Create a function name “calculate”. It will return a double type data and accept a parameter name **testScore**(data type double).

*Cipta satu fungsi bernama calculate. Fungsi akan mengembalikan data jenis double dan menerima satu parameter testScore jenis data double.*

[2marks]  
[2markah]

Question f (i) and f (ii) based on program below.

```
#include<iostream.h>
void greet();
-----X----- //function prototype of department()
void main()
{
    greet();
    department();
}
-----Y----- } //function definition of greet
-----Z----- void department()
{
    cout<<" JTMK ";
}
```

- CLO2  
C1 (f) i. State the department function prototype on X label.  
*Nyatakan prototaip fungsi bagi department () pada label X.*

[2 marks]  
[2 markah]

- ii. Write the definition of greet () function (label as Y) that can print “welcome” as output.  
*Tulis definisi fungsi bagi greet () (label Y) yang boleh mencetak perkataan welcome sebagai output.*

[2 marks]  
[2 markah]

CLO2  
C3

(g) Answer the following questions based on the following declarations.

*Jawab soalan berdasarkan pengistiharan berikut;*

```
int k = 100;  
int *ptr1;
```

- i. Assign pointer ptr1 to variable k.

*Berikan nilai ptr1 kepada pembolehubah k..*

[2marks]  
[2markah]

- ii. Write a command to display the address for ptr1.

*Tuliskan arahan untuk memaparkan alamat bagi ptr1.*

[2marks]  
[2markah]

**QUESTION 3****SOALAN 3**

CLO1

C1

- (a) Identify three (3) types of error in programming.

*Kenalpasti tiga jenis kesalahan di dalam pengaturcaraan.*[3 marks]  
[3 markah]

CLO1

C1

- (b) State the definition of
- identifier**
- in the programming language and give one(1) condition of a valid identifier.

*Nyatakan definisi 'identifier' di dalam bahasa pengaturcaraan dan berikan satu syarat sah bagi 'identifier'.*[3 marks]  
[3 markah]

CLO1

C2

- (c) Write C++ statement to accomplish the following instructions.

*Tuliskan pernyataan C++ untuk memenuhi arahan-arahan berikut.***Declare three (3) variables name `x`, `y` and `result` as `integer` data type.****Print the message "Enter two integer".****Read two (2) integers from the user and store them in the variables `x` and `y`.***Isytihar tiga (3) pembolehubah `x`, `y` dan `result` di dalam kategori `int`.**Papar pesanan "Enter two integer".**Baca dua (2) integer dari pengguna dan simpan di dalam pembolehubah `x` dan `y`.*[3 marks]  
[3 markah]

CLO1

C1

- (d) List and define TWO (2) types of loops.

*Senaraikan dan beri definisi dua jenis pengulangan.*[ 3 marks ]  
[3 markah ]

(e) Write an appropriate **if..else statement** for the following:

CLO1  
C2

Tulis pernyataan **if..else** yang sesuai untuk perkara berikut :

If mark is more than 10, print a message "Very Good",  
otherwise print a message "Good".

Jika mark adalah lebih daripada 10, cetak mesej " Sangat Baik" ,  
sebaliknya cetak mesej "Good "

[ 3 marks ]  
[3 markah]

CLO2  
C2

(f) Write the segment code by using C++ language for **while loop** based on algorithm below.

Tuliskan kod segmen menggunakan bahasa pengaturcaraan c++ untuk gelung while berdasarkan kepada algoritma di bawah.

1. Set counter equal to value 1.
2. Compare whether counter is less than or equal to 10
  - 2.1 if yes go to step 3
  - 2.2 if no go to step 6
3. Display counter
4. Add counter using formula:  
counter= counter+1
5. Repeat step 2
6. End while

[3 marks]  
[3 markah]

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

- (a) Write the following items in a form of
- structure**
- :

*Tuliskan item yang berikut di dalam bentuk struktur:*Structure name: *Store\_item**Nama struktur: Store\_item*

Structure members: Item, Price, Color

*Ahli struktur: Item, Price, Color*Structure variable: *Customer\_A**Pemboleh ubah struktur: Customer\_A*[3 marks]  
[3 markah]CLO2  
C2

- (b) State
- THREE (3)**
- differences between Array and Structure.

*Nyatakan **TIGA (3)** perbezaan di antara Tatasusunan dan Struktur.*[3 marks]  
[3 markah]CLO1  
C1

- (c) Give the definition of
- function**
- and state the type of function below:

*Berikan maksud bagi fungsi dan nyatakan jenis fungsi di bawah:*

void Display()

[3 marks]  
[3 markah]

CLO2  
C2

- (d) Write the segment code for a function definition name `calcAverage()` that receives four integers. The function should calculate the average of the four integers, then return the result (which may contain a decimal place).

*Tuliskan kod segmen untuk definasi fungsi yang bernama `calcAverage()` yang menerima empat nilai integer. Fungsi tersebut akan menerima empat nilai integer dan memulangkan nilai yang mengandungi titik perpuluhan.*

[3 marks]  
[3 markah]

CLO2  
C1

- (e) What is a POINTER and give declaration for POINTER

*Terangkan maksud POINTER dan berikan contoh bagi declaration untuk POINTER*

[3 marks]  
[3 markah]

CLO2  
C3

(f) Convert the following algorithm into C++ code:

*Tukarkan algoritma berikut kepada kod C++:*

Step 1: Declare an array variable named Number with size 3 of type integer.

*Langkah 1: Isytihar pemboleh ubah tatasusunan Number dengan saiz 3 jenis integer.*

Step 2: Declare a pointer named Pnumber.

*Langkah 2: Isytihar penuding Pnumber.*

Step 3: Assign Pnumber to variable Number.

*Langkah 3: Tetapkan Pnumber kepada pemboleh ubah Number.*

Step 4: Assign value of Pnumber with 10.

*Langkah 4: Tetapkan nilai Pnumber kepada 10.*

Step 5: Print the address of Number [0].

*Langkah 5: Paparkan alamat Number [0].*

Step 6: Print the value of object pointed to by Number.

*Langkah 6: Paparkan nilai objek yang dituding kepada Number.*[3 marks]  
[3 markah]END OF QUESTIONS  
*SOALAN TAMAT*