SULIT

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI

JABATAN TEKNOLOGI MAKLUMAT DAN KOMUNIKASI

PEPERIKSAAN AKHIR

SESI I : 2025/2026

DFC10353: PROGRAMING FUNDAMENTALS

TARIKH : 02 DISEMBER 2025
MASA : 8.30 PAGI – 10.30 PAGI (2 JAM)

Kertas soalan 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 SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

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 struktur. Jawab **SEMUA** soalan.*

QUESTION 1

SOALAN 1

CLO1 (a) List **THREE (3)** types of programming languages.
*Senaraikan **TIGA(3)** jenis bahasa pengaturcaraan.*

[3 marks]
[*3 markah*]

CLO1 (b) (i) Describe **ONE (1)** difference between a compiler and an interpreter.
*Huraikan **SATU (1)** perbezaan antara pengkompil dan penterjemah.*

[3 marks]
[*3 markah*]

CLO1

(ii) Intepret the flowchart in Figure B1(b)(ii) below into pseudocode.

Tafsirkan carta alir dalam Rajah B1(b)(ii) kepada pseudokod.

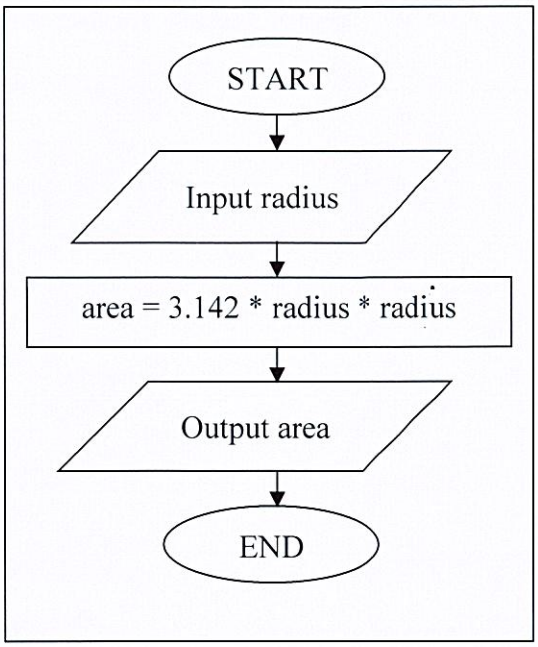

Figure B1(b)(ii) / *Rajah B1(b)(ii)*

[3 marks]

[*3 markah*]

CLO1

(iii) Identify the **input, process** and **output** for the problem in Figure B1(b)(iii).

*Kenal pasti **input**, **proses** dan **output** untuk masalah pada Rajah B1(b)(iii).*

> There are three quizzes taken by DIT students for the course DFC10353 – Programming Fundamentals. You are required to calculate the total and average marks of the quizzes.
>
> *Terdapat tiga kuiz yang diambil oleh pelajar DIT bagi kursus DFC10353 – Asas Pengaturcaraan. Anda dikehendaki mengira jumlah dan purata markah kuiz.*

Figure B1(b)(iii) / *Rajah B1(b)(iii)*

[4 marks]

[*4 markah*]

CLO1 (c) (i) Identify **FOUR (4)** basic structure in the C++ program

*Kenal pasti **EMPAT (4)** struktur asas dalam program C++.*

[4 marks]

[*4 markah*]

CLO1 (ii) Identify the data types for all variables below.

Kenal pasti jenis data bagi semua pemboleh ubah di bawah.

i. temperature_c
ii. price_of_book
iii. phone_number
iv. currency_rate

[4 marks]

[4 markah]

CLO1 (iii) Given the value x = 0, y = 6 and z = 3. Show the answer step-by-step either **TRUE** for the true expression or **FALSE** for the false expression.

*Diberi nilai x = 0, y = 6 dan z = 3. Tunjukkan langkah demi langkah bagi jawapan sama ada **BENAR** untuk ungkapan benar atau **SALAH** untuk ungkapan salah.*

i. ((x == z) && (y == z)) || (x < 1)
ii. ! (x == 0) && (y != 2)

[4 marks]

[4 markah]

QUESTION 2

SOALAN 2

CLO1 (a) (i) Identify **THREE (3)** types of selection control structures in C++ programming.

*Kenal pasti **TIGA (3)** jenis struktur kawalan pilihan dalam pengaturcaraan C++.*

[3 marks]

[3 *markah*]

CLO1 (ii) Express the problem shown in Figure B2(a)(ii) using an *if...else* statement in C++.

Ungkapkan masalah yang ditunjukkan dalam Rajah B2(a)(ii) dengan menggunakan penyataan if...else dalam C++.

```
If mark is more than or equal to 80,
    Display a message "Very Good"
Otherwise display a message "Good"
```

Figure B2(a)(ii) / *Rajah B2(a)(ii)*

[2 marks]

[2 *markah*]

CLO1

(iii) Based on Figure B2(a)(iii) below, convert the *while* statement into *do...while* statement in C++.

Berdasarkan Rajah B2(a)(iii) di bawah, tukar penyataan while kepada penyataan do....while di dalam C++.

```
#include <iostream>
using namespace std;
int main ( )
{
        int total, num=1, count=0;
        while (count<10)
        {
        total = total+num;
        count++;
        cout<<total<<endl;
        }
        return 0;
}
```

Figure B2(a)(iii) / *Rajah B2(a)(iii)*

[4 marks]

[4 *markah*]

CLO1

(iv) Construct a complete C++ program using for loop that displays output shown in Figure B2(a)(iv).

Bina satu program C++ menggunakan gelung for yang akan menghasilkan paparan seperti ditunjukkan dalam Rajah B2(a)(iv).

```
Number 1
Number 2
Number 3
```

Figure B2(a)(iv) / *Rajah B2(a)(iv)*

[4 marks]

[4 *markah*]

CLO1

(v) Predict the output for the sample code in Figure B2(a)(v) if the value of grade='P'

Jangkakan paparan bagi aturcara dalam Rajah B2(a)(v) jika nilai grade='P'.

```
switch (grade){
    case 'P':
            cout<<"Pass"<<endl;
    case 'F':
            cout<<"Fail"<<endl;
            break;
   default:
            cout<<"Invalid Grade"<<endl;
}
```

Figure B2(a)(v) / *Rajah B2(a)(v)*

[2 marks]

[2 *markah*]

CLO1

(b) (i) Demonstrate the statement shown in Figure B2(b)(i) by using a C++ statement.

Demonstrasikan pernyataan yang ditunjukkan dalam Rajah B2(b)(i) menggunakan penyataan C++.

1. Declare an array name studentAge of 10 elements
2. Display the value of the first element of array studentAge

Figure B2(b)(i) / *Rajah Figure B2(b)(i)*

[3 marks]

[3 *markah*]

CLO1

(ii) Based on Figure B2(b)(ii) below, predict the output.

Berdasarkan Rajah B2(b)(ii) di bawah, ramalkan output.

```
#include <iostream>
using namespace std;
int main(){
    float num[5] = { 70.5, 82.5, 63.0, 55.5, 100.0};
    cout<< "Value is\n"<<num[3]-4;
return 0;
}
```

Figure B2(b)(ii) / *Rajah B2(b)(ii)*

[2 marks]

[2 *markah*]

CLO1

(c) (i) Consider the following code on Figure B2(c)(i):

Pertimbangkan segmen kod berikut pada Rajah B2(c)(i):

```
#include <iostream>
using namespace std;
int add (int a);

int main() {
   int number, result;
   number = 5;
   result = add(number);
   cout << "The result is:"<<result<<endl;
   return 0;
}
int add (int number) {
   number = number +100;
   return 0;
}
```

Figure B2(c)(i) / *Rajah B2(c)(i)*

a. Identify the function prototype / *Kenal pasti prototaip fungsi.*

b. Identify the function header / *Kenal pasti kepala fungsi.*

[4 marks]

[4 *markah*]

CLO1

(ii) Develop a function named calculateArea to calculate the area of a circle that returns a float data type and accepts one parameter, which is radius. Given the formula is areaCircle = 3.142 * radius * radius.

*Cipta satu fungsi bernama calculateArea untuk mengira luas bulatan yang memulangkan jenis data float dan menerima satu parameter iaitu radius. Diberi formula iaitu areaCircle = 3.142 * radius * radius.*

[4 marks]

[4 markah]

CLO1

(iii) Write the output of the program code shown in Figure B2(c)(iii) below.

Tulis output bagi kod aturcara dalam Rajah B2(c)(iii) di bawah.

```
#include <iostream>
using namespace std;
int powerOfTwo (int x)
{
   int power2=0;
   power2=x*x;
   cout<<"Power of two:"<<power2<<endl;
   return power2;
}

int powerOfThree (int a)
{
   int power3=0;
   power3=a*a*a;
   cout<<"Power of three:"<<power3<<endl;
   return power3;
}
int main()
{
   powerOfThree(2);
   powerOfTwo(2);
   return 0;
}
```

Figure B2(c)(iii) / *Rajah B2(c)(iii)*

[2 marks]

[2 *markah*]

SOALAN TAMAT