

SULIT



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**PEPERIKSAAN AKHIR
SEMESTER I
SESI 2014/2015**

NAMA KURSUS : PENGATURCARAAN
KOMPUTER
KOD KURSUS : DAE 20102
PROGRAM : 2 DAE
TARIKH PEPERIKSAAN : DISEMBER 2014/ JANUARI 2015
MASA : 2 JAM
ARAHAN : A) JAWAB SEMUA SOALAN
DI BAHAGIAN A.
B) JAWAB SATU SOALAN
SAHAJA DI BAHAGIAN B

KERTAS SOALAN INI MENGANDUNGI **SEBELAS (11)** MUKA SURAT

SULIT

BAHASA MELAYU**BAHAGIAN A**

S1 (a) Kenalpasti keluaran bagi keratan aturcara S1(a)(i) dan (a)(ii) di bawah.

(i)

```

/*Aturcara S1(a) (i)*/
#include<stdio.h>
main()
{
    int k, num=30;
    k=(num>5? (num<=10? 100:200):500);
    printf("%d",num);
}

```

Aturcara S1(a)(i)

(ii)

```

/*Aturcara S1(a) (ii)*/
#include<stdio.h>
main()
{
    int x=4+2;
    int y=6*5;
    int z=10-4;

    printf("%d,%d,%d", x,y,z);
}

```

Aturcara S1(a)(ii)

(2 markah)

(b) Tulis aturcara C yang memaparkan pernyataan berikut.

- (i) Baca **TIGA (3)** nombor dari papan kekunci dan cari purata bagi nombor-nombor berikut.
- (ii) Tukar jarak dalam batu kepada kilometer (km).

(8 markah)

S2 (a) Nyatakan **SAH** atau **TIDAK SAH** bagi pencam di bawah:

- (i) uthm;
- (ii) _color;
- (iii) 2name;
- (iv) Ringgit_Malaysia;
- (v) Kuala-Lumpur;

(5 markah)

- (b) Betulkan dan tulis semula kod **Aturcara S2 (b)** di bawah.

```

/*Aturcara S2 (b) */
#include<stdio.h>
main();
    int x,y;
    x=10;
    y=x++
    printf("%f", x);
    printf("%d", &y)
    }

```

Aturcara S2 (b)

(5 markah)

- S3** **Jadual S3** menunjukkan saiz minima kabel pendawaian elektrik bagi peralatan elektrik.

Jadual S3

Bil	Kategori peralatan elektrik	Saiz Kabel
1	Lampu & Kipas	1.5 mm ²
2	13A Soket Alir Keluar	2.5 mm ²
3	Pemanas Air	4.0 mm ²
4	Litar Utama	16.0 mm ²

Berdasarkan **Jadual S3** di atas,

- (a) Lukis carta alir bagi program tersebut. (7 markah)

- (b) Hasilkan kod pseudo yang boleh menunjukkan pilihan bagi kategori peralatan elektrik serta saiz kabel yang bersesuaian. (8 markah)

- S4** (a) Kira nilai bagi ungkapan di bawah sekiranya a , b dan c adalah pembolehubah integer. Di beri nilai, $a=8$ dan $b=5$.

- (i) $c=b+a*b++$
(ii) $c=75/b+++16\%a$
(iii) $c=a*b-$
(iv) $c=b+++*--b$
(v) $c=b+++2$

(10 markah)

- (b) Berikan **DUA (2)** bentuk operator aritmetik yang digunakan dalam C serta perbezaannya. (5 markah)

- S5** Hasilkan pernyataan berbilang if berdasarkan kepada pernyataan switch di bawah.

```
switch (komponen_elektronik)
{
    Case 1:
        printf("Perintang Tetap\n");
        printf("Komponen Pasif\n");
        break;
    Case 2:
        printf("Diod\n");
        printf("Komponen Aktif \n");
        break;
    Case 3:
        printf("Induktor\n");
        printf("Komponen Pasif\n");
        break;
    default:
        print("Kumpulan Tidak Diketahui\n");
        print("Sila masukkan komponen anda semula\n");
}
```

(10 markah)

- S6** (a) Bina semula pernyataan for bagi **Aturcara S6 (a)** di bawah kepada pernyataan do..while.

```
/*Aturcara S6(a)*/
#include <stdio.h>
int main()
{
    int x;
    for(x=0;x>=10;x=x+1)
    {
        printf("%d", x);
    }
    return 0;
}
```

Aturcara S6 (a)

(5 markah)

- (b) Lakarkan carta alir untuk aturcara **S6 (a)** di atas.

(5 markah)

BAHAGIAN B

S7 Berdasarkan kepada maklumat di bawah, bangunkan satu program untuk mengira jumlah skor dan purata bagi Pertandingan Bowling. Berdasarkan maklumat tersebut, anda dikehendaki:

- (a) Lukis carta alir beserta kod pseudo bagi program tersebut. (10 markah)
- (b) Tuliskan aturcara C bagi program tersebut berdasarkan fungsi seperti yang terpapar di **Jadual S7(i)** di bawah. Contoh keluaran bagi aturcara tersebut adalah seperti di **Rajah S7(iii)**.

Jadual S7 (i)

Prototaip Fungsi	Header Fungsi
<code>void display(float);</code>	Memaparkan purata skor
<code>float getScores(void);</code>	Minta pengguna untuk masukkan skor seperti ditunjukkan dalam Jadual S7 (ii)
<code>float average(float, float, float);</code>	Kira purata markah 3 orang pelajar
<code>int main()</code>	Fungsi utama untuk menjalankan program

Jadual S7 (ii)

Kumpulan	Skor
Kumpulan_1	220
Kumpulan_2	180
Kumpulan_3	255

```

Enter the scores: 220
Enter the scores: 180
Enter the scores: 255
The Average scores is: 218.3
Press any key to continue.....

```

Rajah S7(iii) paparan keluaran

(20 markah)

S8 Bina Program kalkulator yang boleh mengira dua integer dengan menggunakan fungsi dalam C. **Rajah 9(i)** menunjukkan contoh keluaran yang terhasil. **Rajah 9(ii)** pula menunjukkan mesej ralat sekiranya pengguna tidak memilih pilihan seperti yang dipaparkan. Bagi melengkapkan aturcara program tersebut anda dikehendaki:

- (a) Melukis carta alir program. (5 markah)
- (b) Menulis kod pseudo bagi program tersebut. (5 markah)
- (c) Membina program tersebut berdasarkan kod pengaturcaraan Fungsi. (20 markah)

```
ENTER CHOICE FOR CALCULATOR
1 FOR +
2 FOR -
3 FOR *
4 FOR /

3

NOW ENTER FIRST NUMBER
```

Rajah S9 (i): Contoh Keluaran

```
ENTER CHOICE FOR CALCULATOR
1 FOR +
2 FOR -
3 FOR *
4 FOR /

9
WRONG CHOICE
-----
Process exited with return value 0
Press any key to continue . . .
```

Rajah S9 (ii): Mesej ralat

SOALAN TAMAT

ENGLISH**PART A**

Q1 (a) State the output of the code statement in **Q1(a)(i)** and **(a)(ii)** below.

(i)

```
/*Programme Q1(a)(i)*/
#include<stdio.h>
main()
{
    int k, num=30;
    k=(num>5? (num<=10? 100:200):500);
    printf("%d",num);
}
```

Programme Q1(a)(i)

(ii)

```
/* Programme Q1(a)(ii)*/
#include<stdio.h>
main()
{
    int x=4+2;
    int y=6*5;
    int z=10-4;

    printf("%d,%d,%d", x,y,z);
}
```

Programme Q1(a)(ii)

(2 marks)

(b) Write a C program that displays the following statement.

(i) Read **THREE (3)** numbers from the keyboard and find the average of the numbers.

(ii) Change the distance in miles to kilometers (km).

(8 marks)

Q2 (a) State whether each of the following is **VALID** or **INVALID**:

- (i) uthm;
- (ii) _color;
- (iii) 2name;
- (iv) Ringgit_Malaysia;
- (v) Kuala-Lumpur;

(5 marks)

(b) Fix and rewrite the coding of the **Programme in Q2 (b)** below.

```

/*Programme Q2 (b) */
#include<stdio.h>
main();
    int x,y;
    x=10;
    y=x++
    printf("%f", x);
    printf("%d", &y)
    }
    
```

Programme Q2(b)

(5 marks)

Q3 Table Q3 shows the minimum size of the cable wiring for electrical equipment.

Table Q3

No	Category of electrical equipment	Cabel size
1	Lighting & Fan	1.5 mm ²
2	Flow exit 13A Socket	2.5 mm ²
3	Water heater	4.0 mm ²
4	Main circuit	16.0 mm ²

Based on the **Table Q3** above:

(a) Draw a flowchart of a program. (7 marks)

(b) Produce a pseudo code that shows the option for the category of electrical equipment and appropriate cable sizes. (8 marks)

Q4 (a) Calculate the value of the expression below if a, b and c is an integer variable where , a=8 dan b=5.

- (i) c=b+a*b++
- (ii) c=75/b++-16%a
- (iii) c=a*b-
- (iv) c=b++*--b
- (v) c=b++-2

(10 marks)

(b) Explain **TWO (2)** types of arithmetic operator that used in C and the difference between it. (5 marks)

Q5 Produce if multiple statements based on the switch statement below.

```
switch (electronic_component)
{
    Case 1:
        printf("Fixed resistors\n");
        printf("Passive Component\n");
        break;
    Case 2:
        printf("Diod\n");
        printf("Active Component\n");
        break;
    Case 3:
        printf("Induktor\n");
        printf("Passive Component \n");
        break;
    default:
        print("Component not identified\n");
        print("Please insert the component
again\n");
}
```

(10 marks)

Q6 (a) Rebuilt for statement for the Programme in **Q6 (a)** below to do..while statement.

```
/*Programme Q6(a)*/
#include <stdio.h>
int main()
{
    int x;
    for(x=0;x>=10;x=x+1)
    {
        printf("%d", x);
    }
    return 0;
}
```

Programme Q6(a)

(5 marks)

(b) Draw a flowchart for **Q6 (a)** above.

(5 marks)

PART B

Q7 Based on the information below, develop a program to calculate the total score and average score for bowling tournament. You are required to:

- (a) Draw a flowchart with pseudocode of the programs. (15 marks)

- (b) Write a C program based on the function in **Table Q7 (i) below**. The example of output is in **Figure Q7(iii)**.

Table Q7 (i)

Prototaip Fungsi	Header Fungsi
void display(float);	Display the average scores.
float getScores(void);	Ask user to enter scores as shown in Figure Q7 (ii)
float average(float, float, float);	Calculate the average scores for 3 teams
int main()	Main function to run program

Figure Q7 (ii)

Team	Marks
Team 1	220
Team 2	180
Team 3	255

```

Enter the mark: 220
Enter the mark: 180
Enter the mark: 255
The Average mark is: 218.3
Press any key to continue.....
    
```

Figure Q7(iii) Programme Output

(15 marks)

Q8 Produce a calculator program that can calculate two integers, by using Function in C. **Figure 9 (i)** is an example of output as shown. **Figure 9(ii)** the error message if the users not enter the choices as shown.

- (a) Write a flowchart of a program.
- (b) Write a pseudo code of a program.
- (c) Construct a c programming code.

```
ENTER CHOICE FOR CALCULATOR
1 FOR +
2 FOR -
3 FOR *
4 FOR /
3
NOW ENTER FIRST NUMBER
```

Figure 9 (i): Display output

```
ENTER CHOICE FOR CALCULATOR
1 FOR +
2 FOR -
3 FOR *
4 FOR /
9
WRONG CHOICE
-----
Process exited with return value 0
Press any key to continue . . .
```

Figure 9(ii): Error message

-END OF QUESTION-