

CONFIDENTIAL



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2016/2017**

COURSE NAME : COMPUTER PROGRAMMING
COURSE CODE : DAC 20202
PROGRAMME CODE : DAA
EXAMINATION DATE : DECEMBER 2016 / JANUARY 2017
DURATION : 2 HOURS
INSTRUCTION : A) ANSWER ALL QUESTIONS IN SECTION A
B) ANSWER ONE (1) QUESTION IN SECTION B

TERBUKA

THIS QUESTION PAPER CONSISTS OF TWELVE (12) PAGES

CONFIDENTIAL

Q1 Translate the following **pseudo code** into **flowchart**

(a) Main ()

```
Begin
    Print: "Hello World";
End
```

(b) Begin

```
    input x,y
    sum = x+y
    print sum
End
```

(c) Begin

```
    input x
    input y
    input z
    sum = x+y+z
    avg= sum/5
    print avg
End
```

(d) Begin

```
    input hours, rate
    if hours ≤ 30 then
        pay = hours* rate
    else
        pay = 30 *rate + (hours - 30)* rate * 1.5
    print pay
End
```

TERBUKA

UJIAN AKHIR SEMESTER II
MATA KULIAH: SISTEM KOMPUTER II
DIAJUKAN PADA: 15 MARET 2020
DI: LABORATORIUM SISTEM KOMPUTER II
(8 marks)

Q2 Identify the following statement True or False

- (a) The `scanf()` function is used to receive data from user
- (b) One of the comment in C language starts with `*/` and ends with `/*`
- (c) `repeat until` is a loop structure
- (d) A function cannot be called inside another function
- (e) `int array [20, 20];` is a correct declaration of two-dimensional array.

(5 marks)

Q3 Choose the appropriate answer

(a) How many times the program will print "CeDS"?

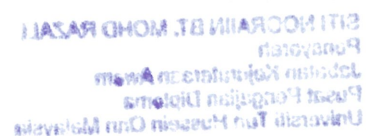
```
#include<stdio.h>
main()
{
    printf("CeDS");
    main();
    return 0;
}
```

- A. Till stack overflows
- B. 1 time
- C. 39584 times
- D. Infinite times



(b) How many times is a do while loop guaranteed to loop?

- A. 0
- B. Infinitely
- C. 1
- D. Variable



(c) Evaluate `!(1 && !(0 || 1))`

- A. False
- B. True
- C. Unevaluated
- D. Error

(d) Which one of the following is a valid function call (assuming the function exists)?

- A. `funct;`
- B. `funct x,y;`
- C. `funct();`
- D. `int funct ();`

(e) What is the index number of the last element of an array with 35 elements?

- A. 34
- B. 35
- C. 36
- D. 33

(5 marks)

Q4 Write a full C programming code that will produce output as below;

```
Enter your Age: 25
You can vote!!
```

(5 marks)

Q5 Provide the appropriate **placeholder** for the following;

- (a) 5
- (b) 0.000593823
- (c) 3.86
- (d) true
- (e) X

TERBUKA

STATIONERIE DAN PERALATAN
Jabatan Pendidikan
Kuala Lumpur
No. 1, Jalan
Kuala Lumpur

(5 marks)

Q6 Calculate the output for the following statements. Each line **DOES NOT** relates to each other. Given:

a=5, b=3, c=10 and d=2.

- (a) `printf(" %d",--a);`
- (b) `printf(" %d",b++);`
- (c) `printf(" %d",c/d);`
- (d) `printf(" %d",((a*d)%c));`
- (e) `printf(" %d",--a - b-- + ++d);`

(5 marks)

Q7 Identify the error and write the right coding

(a) // This following program should print 3 times of Hello Class!

```
#include <stdio.h>

main()
{
    int x;
    for (x<3; x=0; y++)
        printf("Hello Class!\n");
}
```

(b) //This program give an infinite loop. Remove unsuitable code/symbol

```
int x = 5;
while( x > 0 );
    x--;
```

TERBUKA

(c) //This following program should only print 3 times of **Hello World**

```
{
    int x=0;
    do
    {
        printf("Hello World!\n");
        x=x-1;
    }while (x<3);
}
```

UNIVERSITI TEKNOLOGI MALAYSIA
 Pusat Penyelidikan dan Inovasi
 Jabatan Penyelidikan dan Inovasi
 Penyelidikan

(d) //This following program should only print **Hello...OK**

```
#include <stdio.h>
main()
{
    int a=10;
    switch(a)
    {
        case 5+6:
            printf("Hello...");
        case 5+4:
            printf("OK\n");
    }
}
```

(4 marks)

Q8 Write the output for the following program if the input is **85, 79, 83, 77, 65**

```
#include <stdio.h>
int main()
{
    int phy, chem, bio, math, comp;
    float per;

    printf("Enter five subjects marks= ");
    scanf("%d%d%d%d%d", &phy, &chem, &bio, &math, &comp);

    per = (phy + chem + bio + math + comp) / 5.0;

    printf("Percentage = %.2f\n", per);

    if(per >= 90)
    {
        printf("Grade A");
    }
    else if(per >= 80)
    {
```

TERBUKA


```
        printf("Grade B");
    }
    else if(per >= 70)
    {
        printf("Grade C");
    }
    else if(per >= 60)
    {
        printf("Grade D");
    }
    else if(per >= 40)
    {
        printf("Grade E");
    }
    else
    {
        printf("Grade F");
    }
    return 0;
}
```

(3 marks)

- Q9** Create a simple coding using **while** statement and apply the function call that will produce output as shown;

```
Hello Class!
Happy Holiday!!
Happy Holiday!!
Happy Holiday!!
See you again..Perhaps!
```

(8 marks)

- Q10** Differentiate between a local variable and global variable. Give a simple example that can show the difference.

(4 marks)

TERBUKA

THE FACULTY OF ENGINEERING
UNIVERSITY OF MALAYA
KUALA LUMPUR
MALAYSIA

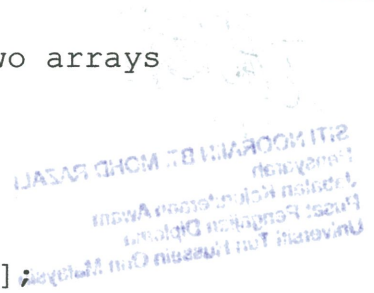
Q11 Write the missing parts of the code to create a working program that will accomplished the stated task.

```
// This program is to calculate the addition of 2x2 matrix
#include <stdio.h>
int main()
{
    (a) a[2][2], b[2][2], c[2][2];
    int i, j;

    // Taking input using nested for loop
    printf("Enter elements of 1st matrix\n");
    for(i=0; (b); ++i)
    for(j=0; j<2; ++j)
    {
        printf("Enter a (c) : ", i+1, j+1);
        scanf("(d)", &a[i][j]);
    }

    // Taking input using nested for loop
    printf("Enter elements of 2nd matrix\n");
    for(i=0; i<2; ++i)
    for(j=0; (e); ++j)
    {
        printf("Enter b%d%d: ", (f));
        scanf("%f", (g));
    }

    // adding corresponding elements of two arrays
    for(i=0; i<2; ++i)
    for(j=0; j<2; ++j)
    {
        (h) = a (i) + b[i][j];
    }
}
```




```
}

// Displaying the sum
printf("\nSum Of Matrix:\n");

for(i=0; i<2; ++i)
for(j=0; j<2; ++j)
{
    printf(_____(j)_____);
    if(j==1)
        printf("\n");
}
return 0;
}
```

(10 marks)

Q12 Write the **output** for the following program.

```
/* Histogram printing program */
#include <stdio.h>
#define SIZE 10
main()
{
    int n[SIZE]={1,2,3,4,5,5,4,3,2,1};
    int i, j;
    printf("%s%13s%17s\n", "Element", "Value", "Histogram");

    for (i=0; i<= SIZE - 1; i++)
    {
        printf("%7d%13d",i, n[i]);
        for (j=1; j <= n[i]; j++)
            printf("%c", '*');
        printf("\n");
    }
}
```

A red rectangular stamp with the word "TERBUKA" in bold, uppercase letters. The stamp is slightly tilted and has a double-line border.

```
return 0;  
}
```

(10 marks)

Q13 Explain briefly the difference between **char** and **string** with example.

(3 marks)

TERBUKA

SECTION B

Q14 (a) Explain the switch statement with its syntax.

(3 marks)

(b) Provide a complete C programming to calculate the commission received by a salesman per month. The commission on a salesman's total sale is:

- i. If sales <100, there is no commission.
- ii. If $100 \leq \text{sales} \leq 550$, commission = 10% of sales.
- iii. If sales > 550, commission = 20% of sales.

This program request the values of sales from users.

(12 marks)

(c) By using **for loop statement**, show a full programming code that calculate the sum of first natural numbers. The output of the program is as display in the box.

Note: Positive integers 1, 2, 3 ... n are known as natural numbers.

```
Enter a positive integer = 6
Sum of first 5 natural numbers = 21
```

(10 marks)

TERBUKA

Q15 (a) Explain the meaning of array and give the syntax of array declaration.

(3 marks)

(b) Provide a programming code that can give an output as below.

```
a [0][0] = 0
a [0][1] = 0
a [1][0] = 1
a [1][1] = 2
a [2][0] = 2
a [2][1] = 4
a [3][0] = 3
a [3][1] = 6
a [4][0] = 4
a [4][1] = 8
```

(12 marks)

(c) Show C program to store the elements in the array and to print them from the array.

1	6	1	1	9
a[0]	a[1]	a[2]	a[3]	a[4]

(10 marks)

TERBUKA

-END OF QUESTIONS -

CONFIDENTIAL