UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION2019 /2020

COURSE NAME	:	COMPUTER PROGRAMMING
COURSE CODE	:	BIT 10303
PROGRAMME CODE	:	BIT
EXAMINATION DATE	:	DECEMBER 2019 / JANUARY 2020
DURATION	:	3 HOURS
INSTRUCTIONS	:	A) ANSWER **ALL** QUESTIONS
		B) PLEASE WRITE YOUR ANSWERS IN THIS QUESTION BOOKLET

THIS QUESTION PAPER CONSISTS OF **TWELVE (12)** PAGES

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Q1   (a)   Find the error in each of the following program segments and correct the error.

i)
```c
int shape()
{
        printf("Inside function shape\n");

        int color(void)
        {
                printf("Inside function color\n");
        }
}
```
                                                                    (3 marks)

Answer:

ii)
```c
int total(int a int b)
{
        int result;
        result = a + b;
}
```
                                                                    (5 marks)

Answer:

iii)
```
void circle(float radius);
{
        float radius;
        printf("%f",radius);
}
```

(3 marks)

Answer:

iv)
```
void addition()
{
        int num1, num2, num3, total;
        printf("Enter three integers: ");
        scanf("%d %d %d", &a, &b, &c);
        total = num1 + num2 + num3;
        printf("Result is %d", total);

        return total;
}
```

(3 marks)

Answer:

v)
```
int sum(int m,n)
{
        if(m == 0)
                return 0;
        else
                m + sum(n - 1);
}
```

(6 marks)

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Answer:

(b) Answer **Q1 (b)(i)** – **Q1 (b)(iii)** base on **FIGURE Q1 (b)**.

```
1.      #include <stdio.h>
2.
3.      void print(int);
4.      void newLine();
5.
6.      int main()
7.      {
8.          int a, b, c;
9.          a=5; b=2; c=8;
10.         print(a);print(b);print(c);newLine();
11.     }
12.     void print(int n){
13.         printf("%d",n);
14.     }
15.     void newLine(){
16.         printf("\n");
17.     }
```

FIGURE Q1 (b)

i) What are the program outputs?

(2 mark)

Answer:

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ii)   If line 8 in the program is being modified to `print(b);`
        `newLine(); print (a); print(c);` what will be the
        output ?

                                                        (2 mark)

Answer:

iii)   Modify line 8-10 in the program to obtain the following output
        as follow:

```
20
19
```

                                                        (6 marks)

Answer:

Q2   Answer **Q2 (a)** – **Q2 (c)** based on **FIGURE Q2**.

List				
list[0]	list[1]	list[2]	list[3]	list[4]
32	16	53	21	47

FIGURE Q2

(a)   Write program segment using `for` loop that sums the odd values from
        the array `list` and display the value of sum. For example, the sum for
        this list would be `121` `(53+21+47)`.

                                                        (10 marks)

Answer:

(b)   Write program segment using `for` loop that sums the odd-numbered
        elements (elements `1` and `3`) values from the array `list` and display the
        value of sum. For example, the sum for this list would be `37` (16+21).
                                                                    (10 marks)

Answer:

(c)   Assume value for array `list` is entered by user. Write program
        segment using `for` loop that allowed the user to enter the values.
                                                                    (6 marks)

Answer:

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(d)   Are x3 and x[3] describe the same meaning in array?

(1 mark)

Answer:

(e)   Answer the following question for declaration char list[5];

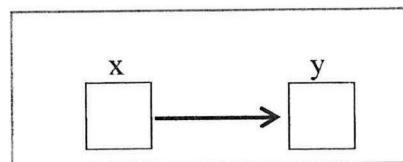i)   How many memory space are allocated for data storage?

(1 mark)

Answer:

ii)   What type of data can be stored in array list?

(2 marks)

Answer:

Q3   (a)   Write a program segment for **Q3 (a)(i) – Q3(a)(iv)** based on **FIGURE Q3(a)**.

FIGURE Q3 (a)

i)   Declare a type float for variable x

(2 marks)

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Answer:

ii)   Declare a type `float` for variable y

(2 marks)

Answer:

ii)   Assign address of variable to pointer variable

(2 marks)

Answer:

iii)   Use variable x to assign value 99.99 to the variable y

(2 marks)

Answer:

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iv)   Print the value of variable y through variable x

(2 marks)

Answer:

(b)   Write a program segment to calculate area and volume of cylinder based on **FIGURE Q3(b)**. In your program segment, the value of radius and height are entered by user and must using struct coord. (area=2*π*radius*height+2*π*radius^2, volume=π*radius^2*height, π=3.14).

```
#include <stdio.h>
struct coord{
        int height;
        int radius;
};

int main(){

        //program segment
}
```

FIGURE Q3 (b)

(10 marks)

Answer:

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Q4   Answer **Q4(a)** – **Q4(b)** based on **Table Q4**, **FIGURE Q4(a)** and **FIGURE Q4(b)**. Data from **Table Q4** is content for `expensesInput.txt` fail.

Table Q4

Item	Price	Quantity
Bag	34.50	2
File	18.00	3
Shoes	67.20	2
Pen	3.50	5

```
#include <stdio.h>
#include <conio.h>

int main(){
        FILE   *fr,*fw;
    fr = fopen("expensesInput.txt","r");
    fw=fopen("expensesOutput.txt","w");
    char item[30];
    float price;
    int quantity,count;

    //read data

   for (count=0;count<4;count++){

       //code to display output in file
       //code to display output on screen


       }

fclose(fr);
fclose(fw); }
```

FIGURE Q4 (a)

(a)   Write a program segment to
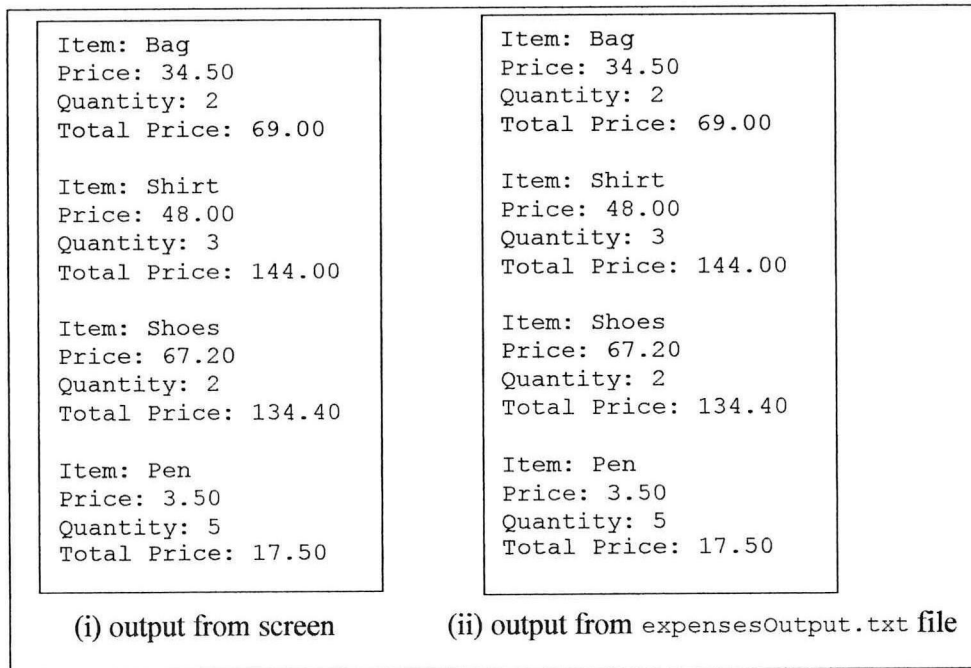   i)   read data from `expensesInput.txt` file.

(9 marks)

Answer :

     ii)   write data from `expensesInput.txt` on screen.

                    (3 marks)

Answer :

```
Item: Bag                        Item: Bag
Price: 34.50                     Price: 34.50
Quantity: 2                      Quantity: 2
Total Price: 69.00              Total Price: 69.00

Item: Shirt                      Item: Shirt
Price: 48.00                     Price: 48.00
Quantity: 3                      Quantity: 3
Total Price: 144.00            Total Price: 144.00

Item: Shoes                      Item: Shoes
Price: 67.20                     Price: 67.20
Quantity: 2                      Quantity: 2
Total Price: 134.40            Total Price: 134.40

Item: Pen                        Item: Pen
Price: 3.50                      Price: 3.50
Quantity: 5                      Quantity: 5
Total Price: 17.50             Total Price: 17.50
```

(i) output from screen   (ii) output from `expensesOutput.txt` file

FIGURE Q4(b)

(b)   Write the program segment to display total price (`total price = price x quantity`) as shown in **FIGURE Q4(b)**.

     i)   in `expensesOutput.txt`

                    (3 marks)

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Answer:

  ii) as on output screen

(5 marks)

Answer:

- END OF QUESTIONS -