



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2010/2011**

**COURSE NAME : COMPUTER PROGRAMMING**  
**COURSE CODE : DTI 2143/DAT10603**  
**PROGRAMME : 1 DAT/ 3 DDT/3 DDM/ 3 DFA**  
**EXAMINATION DATE : APRIL/MAY 2011**  
**DURATION : 2 ½ HOURS**  
**INSTRUCTIONS : ANSWER ALL QUESTIONS**

**THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES**

**SECTION A**

**Q1** What is the output of the program snippet?

```
int counter1=1;
int counter2;
while(counter1 < 4)
{
for (counter2 = 0; counter2 < 5; counter2++)
{
printf("%d\t",counter2);
if (counter2 == 2){
break;
}
}
printf("\n");
counter1 += 1;
}
```

(10 marks)

**Q2** Identify 5 errors and write a correct coding of Program

```
L1 #include <stdio.h>;
L2 int main()
L3 {
L4 int i;
L5 printf("Enter an integer: ",i);
L6 scanf("%d",i);
L7 switch(int);
L8 {
L9 case 4: printf("four ");
L10 case 3: printf("three ");
L11 case 2: printf("two ");
L12 case 1: printf("one ");
L13 default: printf("something else!")
L14 }
L15 return 0;
L16 }
```

(10 marks)

- Q3** (a) Assumed that the variables  $x$ ,  $y$  and  $z$  have been declared as follows:

```
int x = 5, y = -1, z = 3;
```

Find the value of A in each equation of C expressions separately. Show your calculation.

(i)  $A = ((18 / 2) \% z) + x$

(ii)  $A = 6 * (6 \% z) + (83 - y) * 2$

(iii)  $A = x++ + ++z - y--$

(6 marks)

- (b) Convert the following mathematics formula into C arithmetic expression.

(i)  $z = \frac{1}{x^3} + 7(y - x)$

(ii)  $\frac{-b - \sqrt{b^2 - 4ac}}{2a}$

(iii)  $\sqrt{\frac{a^2 + b^2}{a^2 - 1}}$

(9 marks)

- Q4** Write a correct C code segment for each of the following statements:

- (a) `student` is a variable where its value is 'Std'.

(2 marks)

- (b) Print the value of variable `price` with two floating point format.

(2 marks)

- (c) If the value of variable `mark` is between 80 and 90, then assign 'B' to variable `grade`.

(2 marks)

- (d) Add 5 to variable `mark` and assign it to variable `total`.

(2 marks)

- (e) Print the statement "From UTHM to be a Star".

(2 marks)

- Q5** Convert the following C code segment which contains `if..else` statement to `switch..case` statement.

```
#include <stdio.h>

int main()
{
    int a,b;
    printf("type any number\n");
    printf("type any number again\n");
    scanf("%d",&a);
    scanf("%d",&b);
    if (a > 0 && b > 0)
        printf("Both numbers are positive\n");
    if (a == 0 || b == 0)
        printf("At least one of the numbers = 0\n");
    if (!(a > 0) && !(b > 0))
        printf("Both numbers are negative\n");
    return 0;
}
```

(5 marks)

**SECTION B**

Instruction: Answer **ALL** questions.

**Q6** Based on sample of output;

```
Please enter your name and age: merlin 21
```

```
Hi merlin you are 21 years old. Thank you
```

write a C program that user need to enter the name and age.

(10 marks)

**Q7** Based on sample of output;

```
Please enter S for Square, T for Triangle and C for Circle: T
```

```
Selected Shape : Triangle
```

```
Please enter Length of Base and Height : 7      2
```

```
Volume of triangle = 7
```

```
Thank you
```

write a C program that prompt user to select the type of shape; circle, square and triangle. Then, calculate the volume of the selected shape. Display an appropriate output of the selected shape. Assume that all variables are integer data types. You must write your program using function to calculate volume of each shape and if statement to do user shape selection.

(20 marks)