



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2012/2013**

COURSE NAME : COMPUTER PROGRAMMING
COURSE CODE : BIT 10303
PROGRAMME : 1 BIT
EXAMINATION DATE : DECEMBER 2012/JANUARY 2013
DURATION : 2 HOURS 30 MINUTES
INSTRUCTION : ANSWER ALL QUESTIONS.

THIS QUESTION PAPER CONSISTS OF SEVEN (7) PAGES

SECTION A

Q1 State whether each of the following identifier is **VALID** or **INVALID**.

- (a) number
- (b) character
- (c) 5five
- (d) \$100
- (e) _130413
- (f) un1vers1t1
- (g) totalpay*allowance
- (h) RXZ
- (i) void
- (j) One=1

(10 marks)

Q2 State whether each of the following statement is **TRUE** or **FALSE**.

- (a) All variables must be given data type when they are defined.
- (b) Every `scanf` statement should not have ampersand in the variable list section.
- (c) The placeholder for a string data type is `%c`.
- (d) `a += b` is similar to `a = a + b`.
- (e) An expression containing `(a > 0 && a < 10)` operator is true when only one condition is true.
- (f) Identifiers defined in a C program is case sensitive.
- (g) To refer to a particular location or element within an array, the name of the array and the index of the particular element must be specified.
- (h) The statement of `printf("%.6s", "statement")` will print `state`.

- (i) The following switch ... case statement is valid.

```
int number;
switch (number)
{
    case == 1 : printf("\nOne");
               break;
}
```

- (j) Whenever a function definition is written before `main()`, the function prototype can be omitted.

(10 marks)

SECTION B

Q3 State the output for each of the statement below:

(a)

```
int price = 3;
int no_of_item = 5;
price += no_of_item * 6;
printf("%d", price);
```

(2 marks)

(b)

```
for (int i=2; i<=5; i++)
{
    printf("%d\n", i * 2 + 1);
}
```

(4 marks)

(c)

```
int number[4];
int i = 0;
while (i <= 3)
{
    number[i] = i * 2;
    printf("%d\n", number[i]);
    i++;
}
```

(4 marks)

Q4 A C program contains the following variable declarations.

```
float a = 2.5, b = 0.0012, c = 3000.0;
char d1 = 'A' , d2 = 'B' , d3 = 'C';
```

Create a statement to produce the following output. Assume * is a space.

(a) 2.500000 0.001200 3000.000000

(2 marks)

(b) ***2.500 ***0.001 3000.000

(2 marks)

(c) d1=A d2=B d3=C

(2 marks)

(d) A** 2.50 **B 0.001 ***C 300.0

(2 marks)

(e) 2.5000** 0.001*** 3000.0** C B A

(2 marks)

Q5 Rewrite the following switch ... case statement into if ... else equivalent statement.

```
char gred;
switch(gred)
{
    case 'a'    :
    case 'A'    : printf("Excellent");
                 break;

    case 'b'    :
    case 'B'    : printf("Good");
                 break;

    case 'c'    :
    case 'C'    : printf("Fair");
                 break;

    case 'd'    :
    case 'D'    : printf("Pass");
                 break;

    default    : printf("Not in the list");
                 break;
}
```

(6 marks)

Q6 Determine the output of the following arithmetic operation if $j=2$ and $k=6$.

(a) `printf("%d", j + ++k);`

(2 marks)

(b) `printf("%d", ++k - j++);`

(2 marks)

(c) `printf("%d", ++k + k-- * j++);`

(2 marks)

(d) `printf("%d", k--/j++ + k-- - j++);`

(2 marks)

(e) `printf("%d", k-- * k++ + j-- * ++j - k/j);`

(2 marks)

Q7 Write a correct C code segment for each of the following statement.

(a) `character_name` is a string variable assigned with value Ahmad. (1 mark)

(b) Print the value of `total_price` variable in two floating point format. (1 mark)

(c) Add variable `x` to the variable `total`, then increment `total` by 1. (2 marks)

(d) The total of even numbers from 1 to 10 using `do ... while` loop. Assume variables `counter` and `total` are already defined. (4 marks)

Q8 Write a C statement to assign value in every element in a 2 dimensional array named `total_mark`. The array has 4 rows and 5 columns. (6 marks)

SECTION C

- Q9** Write a complete C program to calculate the price of an item after discounts that should be rewarded to customers based on the item's price. The discount rewarded is determined by a function. This function takes price of an item and returns the price after discount. If the price of an item is below RM150, 50% discount will be given, while items that range between RM150 to RM350 should be given 40% discount. Items that cost other than these prices are eligible for 20% discount.

(15 marks)

- Q10** Power Energy Resources Sdn Bhd (PERSB) is a reputed electricity supplier company for residents and industries. PERSB charges the electricity usage differently based on tariff as shown in **Table 1**.

Table 1: Electricity Tariff

Code	Consumer Type	Charge
R	Resident	RM0.26 cents for every kWh.
I	Industry	RM0.46 cents for the first 600kWh and RM0.30 cents if above 600kWh.

*kWh (kilo Watt per hour)

Write a complete C program to calculate the total charge based on the electricity usage. The program will prompt user to enter code for consumer type and total usage of electricity in kWh. The program then will calculate and display the charge incurred.

(15 marks)

- END OF QUESTION -