UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2012/2013

COURSE NAME	:	PROGRAMMING PRINCIPLES
COURSE CODE	:	DAT 10603
PROGRAMME	:	1 DAT
EXAMINATION DATE	:	OCTOBER 2012
DURATION	:	2 ½ HOURS
INSTRUCTIONS	:	ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF NINE (9) PAGES

Q1 (a) Explain the importance of algorithm.

(2 marks)

(b) List **THREE (3)** advantages of algorithm.

(6 marks)

(c) List **TWO (2)** differences between flow chart and pseudocode .

(4 marks)

(e) Explain each stages of the SDLC life cycle.

(8 marks)

Q2 (a) Write a pseudocode that represents the flow chart in figure Q2(a).

(4 marks)

(b) Identify the output of the following segment for input value of n is 15.

```
int n, ev =0;
printf(" Masukkan nilai n: ");
scanf("%d",&n);
while (ev <= n ) {
    printf("%3d", ev);
    ev = ev + 2;
}
printf("\n");
```

(4 marks)

(c) Identify the output of the following segment.

```
int main(){
int a=12;
if (a < 12)
    printf("less \n");
else
    printf("not less \n");
}
```

(4 marks)

(d) Write a program that produces the output of the following result in **Table Q2(d).**

(8 marks)

Q3 (a) Identify the output of the following segment. Let x=25 and y=10.

```
int i=15, x;
double y;
cout << "Please enter an integer value x: ";
cin >> x;
cout << "Please enter an integer value y: ";
cin >> y ;
y = pow(x,3);
cout << "\nThe value you entered of i is "<< i <<" and
y is " <<x;
cout << "\nand the result of twice of i is " << i*2
<<" and y raised by 3 is "<< y <<"\n\n";
```

(8 marks)

(b) Write a program using looping procedure that produces the following output.

Output:

```
1 x
2 xx
3 xxx
4 xxxx
5 xxxxx
6 xxxxxx
7 xxxxxxx
8 xxxxxxxx
9 xxxxxxxxx
10 xxxxxxxxxx
```

(6 marks)

(c) Write a program using looping procedure that produces the following output.

Output:

```
ppppppppp
    p   p
     p p

ppppppppp
    p   p
     p p

ddddddddd
d       d
 d     d
   d d
```

(6 marks)

Q4 (a) Identify the output of the following statements.

(i) `int x = 10; int y = 2; double a = x % y;  a=0`

(ii)
```
int a= 30, b=10; a -= 5;
```

(iii)
```
int f, g=55; f=++g; g=--f+10; cout <<" f = "
<<f<<endl; cout <<" g = " << g<<endl;
```

(iv)
```
int d=2,b=3, c=5; c -= d+b;
```

(8 marks)

(b) Identify the output of the following statements; let `x = 33.2; y = 3;` and `z = 25;`.

(i)
```
int abs(int x);
```

(ii)
```
double pow10(int x);
```

(iii)
```
double sqrt(double x);
```

(iv)
```
double floor(double x);
```

(v)
```
double ceil(double x);
```

(vi)
```
double pow(3,2);
```

(12 marks)

Q5 (a) Give **TWO (2)** reasons why function are importance.

(4 marks)

(b) Identify the missing statement in program that produced the given results.

```
int i=0;
while ____(i)_____ {
  cout <<  i <<"  " << ____(ii)____ <<endl;
      ____(iii)_____;
}
```

Output:

```
0  10
1  9
2  8
3  7
4  6
5  5
Press any key to continue . . .
```

(6 marks)

(c) Write a function that add two integers. The main function is given in the following code listing. Use first integer as **a** variable and the second integer as **b** variable;

```
int main ()
{
  int c;
  c = sum(5,3);
  cout << "The result is " << c;
  return 0;
}
```

(6 marks)

(d) Identify the missing code statement of the following functions. The output result are given below.

```
int subtraction (int a, int b)
{
  int subs;
subs = _____(i)_____;
___(ii)____(subs);
}
int main ()
{
  int x=5, y=3;
  cout << "Subtracting 2 from 7 is " << subtraction (7,2)
<< '\n';
  cout << "Subtracting y from x is " << subtraction (x,y)
<< '\n';
  return 0;
}
```

Output:

```
Subtracting 2 from 7 is 5
Subtracting y from x is 2
Press any key to continue . . .
```

(4 marks)

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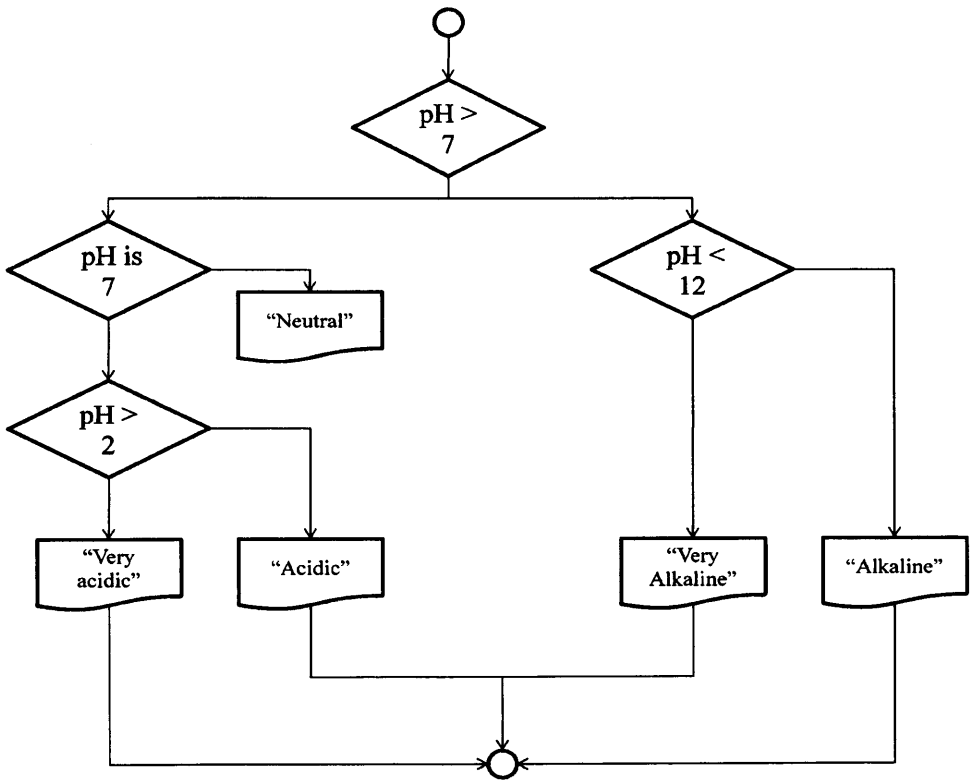

FIGURE Q2(a)

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TABLE Q2(d)

i	i^2
0	0
1	1
2	4
3	9
4	16
5	25
6	36