Computer Sciences
University of
Technology

Date: 27 / 5 / 2012
Time: 3 hours
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Final Exam. 2011-2012
First Term

Subject :**Programming**
Class: **First Techniques**
Branch: **Software**

Note: Answer Three Questions Only

Q1 Suppose you have the following program

```
#include<iostream.h>
Int   square(int x)
{int    s;
s=x*x;
return(s);
}
Int   sum(int y)
{int     sum3=3;
Sum3=sum3+square(y);
return (sum3);
}
void   main()
{int   z, total ,a ,b;
cin>>z;
total=sum(z);
cout<<total;
cin>>a;
b=square(a);
cout<<b;
}
```

a) Determine local and nonlocal variables for each function. [5 marks]

b) Determine formal and actual parameters for each function. [5 marks]

c) Draw subprogram call-return diagram if the CPU execute subprogram square. [10 marks]

أقلب الصفحه

Q2

a) Draw an algorithm or Forth Generation Language (4GL) required to find the sum of negative numbers among 50 numbers entered by the user. [10 marks]

b) Draw a flowchart for the above algorithm [10 marks]

Q3 Assume that the store is as shown below

x	10	Integer
y	7	Integer
q		Integer
z		Real
t		Truth value

a) After the processor executes the following three statements, what will the store look like?

y ← y/x

z ← y/x [10 marks]

t ← x>y

b) Given the store as modified by (a) ,what will the store look like after the processor executes the following three statements?

x ← x↑3 [10 marks]

q ← y+y*y

t ← (x>y) and (q > y)

Q4 Define computer program, list the steps of developing computer programs and then describe the purposes of each step. [20 marks]

Good Luck