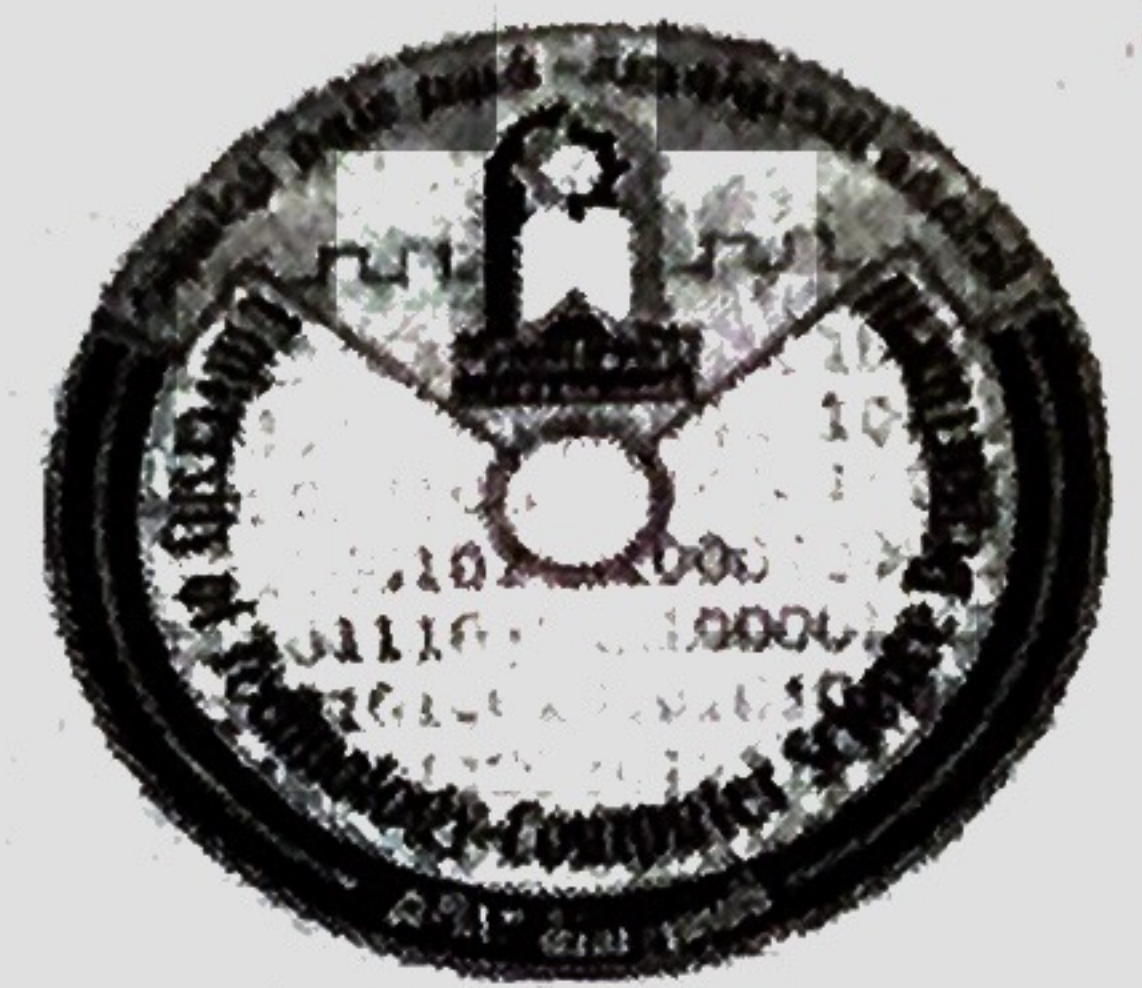




University of Technology
Department of Computer Science
Final First Course Exam / 2017 -2018



Subject: Object Oriented Prog.
Branch: All branches
Examiners: Dr. Bashar & Ekhlal

Year: second
Time: 3 Hours
Date: 13/1/2018

Note: Answer Five questions only (12 marks for each question)

Q1// Write an object oriented program that find the area and perimeter of square. Create a class called **square** which contains one private (**side**) of type int, also class square contains constructor to read side and two functions **get_area()** to find the area of square and **get_perimeter()** to find the perimeter of square. The main program includes the call of the functions to **100** objects.

Hint: $\text{area of square} = (\text{side})^2$

$\text{Perimeter of square} = 4 * \text{side}$

Q2// Write an object oriented program that find the average of two number using friend class concept. Create three classes called **first**, **second** and **third**. Class first contains one private (**x**) of type int and a function **get_x()** to read a value for x, Class second contains one private (**y**) of type int and a function **get_y()** to read a value for y and class third contains one private (**z**) of type float and a function **get_z()** which computes the value of z from the average of x and y. The main program includes the call of the functions

Q3// Write an object oriented program that include a class called **student**. Use the concepts of scope operator to write the program. Student class includes private elements **name**, **stage_no** and **age**, and two functions **get()** to read class elements and **show()** to print the value of class elements.

Hint: the main program includes the following declaration: **student * st_**

Q4// A:Find the outputs :

```
#include<iostream.h>
```

```
void repchar(float=4.4,int =4);
```

```
main()
```

```
{ repchar(); repchar(2.5,4); repchar(4.1); } // end of main
```

```
Void repchar(float f, int n)
```

```
{ for(int i=1; i<=n-1; i++)
```

```
For(int j=1; j<=2; j++) cout<<f<<i<<j ;
```

```
cout<<"****"; }
```

B- Write a simple object oriented program to represent the class object member between two classes (class of point and class of rectangle) where class point contain xval , yval of integer type and rectangle contain two objects (length,width) of point class.

Q5// A-Write an oo program to find the sum of triangle and circle areas using class of triangle and circle, use scope operator of member function.

Hint:Area of triangle is $(1/2b*h)$, area of circle (r^2*Pi)

B-write an object orientated program using friend function concept. The program includes a class **sample**. Class sample includes two private variable **a** and **b** which are of type int. Class **sample** includes a function **read()** to read the value of a and b. The main program includes a function **swap()** to replace **a** by **b** and **b** by **a**.

Q6// Trace the program and find the output from it

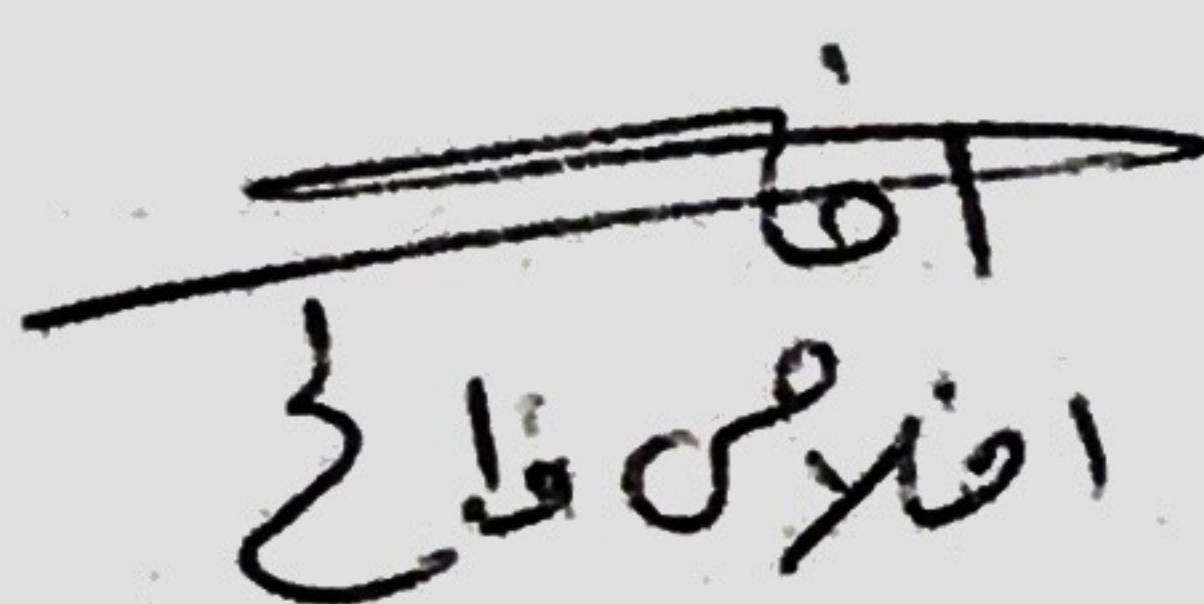
A

```
#include <iostream.h>
class test
{static int count;
int code;
public:
void setcode()
{ cout<<"i am in setcode"<<endl;
count+=2;
code=count; }
void showcode()
{ cout<<"object number" << code <<"\n";
}
static void showcount()
{ cout<<"count:"<<count<<"\n"; }
};
int test::count=0;
void main()
{ test t1,t2;
t1.setcode();
t2.setcode();
test::showcount();
t1.showcode();
t2.showcode();
}
```

B

```
# include <iostream.h.>
class point
{
private:
int xval,yval;
public:
point()
{ xval=0; yval=0;
cout<<"xval="<<xval<<"yval="<<yval << endl;
}
point(int x,int y)
{ xval=x+2; yval=y+3;
cout<<"xval="<<xval<<"yval="<<yval <<"\n";
}
friend int sum(point p);
};
int sum(point p)
{
return ( p.xval + p.yval );
}
void main( )
{ point p;
point p(2,2);
cout<<" the summation of x & y = "<< sum(p);
}
```

Signature:



Signature:

