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

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

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: **area of square= (side)^2**

Perimeter of square= 4*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

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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);
}
```

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