

Roll Number: _____

Group/Sub-Group: _____

Thapar Institute of Engineering & Technology, Patiala

Department of Computer Science & Engineering

15 Nov 2012

Auxiliary Examination**Course Code:** UTA018 (Object Oriented Programming)**Time:** 2 Hours, M. Marks: 50**Name of Faculty:** Dr. Nidhi Kalra**Note:** Attempt any five questions. Assume any missing data suitably.

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|-----|---|
| Q.1 | Fill in the blanks: (2*5=10) _____ is the process of hiding irrelevant information from the user. _____ is the process of wrapping the data and functions into a single unit. Using _____ object of one class can derive the properties of another class. _____ is an important feature of OOP and implemented as operator/function overloading or function overriding. A _____ is a declarative region that provides a scope to the identifiers inside it. |
| Q.2 | Write a C++ program using a class containing (i) <i>two</i> private integer variable (ii) <i>two</i> public functions: <code>getdata(..)</code> , <code>display(..)</code> to input and output the integer variable of the object, (iii) <code>main()</code> function for object creation and accessing member functions. (10) |
| Q.3 | What is constructor overloading? Write a program using constructor overloading to print the <code>item_id</code> of the item by creating an Item class. If no <code>item_id</code> is passed while creating an object of the Item class, then the <code>item_id</code> should be 1001, otherwise the <code>item_id</code> should be equal to the number value passed while creating the object of the Item class. (2,8) |
| Q.4 | A template is a simple and yet very powerful tool in C++ to make the code simple and efficient. (a) What is a <i>template</i> in C++? (4) (b) Given below is the C++ code for finding the max of two integers. Create a template function that returns the greater one of two objects. (6) <pre>int GetMax (int a, int b) { return (a>b?a:b); }</pre> |
| Q.5 | Write the brief definitions about the following (2x5 = 10) i. <i>static</i> data member ii. <i>const</i> member function iii. <i>Inline</i> function iv. <i>Exception handling</i> v. <i>Friend</i> function |
| Q.6 | a. What is the output of the following code? (5) <pre>#include<iostream> using namespace std;</pre> |

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class Base{
protected:
int i;
public:
Base(int a){
cout<<"Base Constructor"<<endl;
i=a;
}
void baseShow() {
cout<<"i="<<i<<endl; } };
class Child : public Base {
int j;
public:
Child(int a, int b) : Base(a) {
cout<<"Child Constructor"<<endl;
j=b;
}
void childShow(){
cout<<"i="<<i<<endl;
cout<<"j="<<j<<endl;
}};
int main() {
Child c(10,20);
cout<<"In main"<<endl;
c.childShow();
}

```

(b) What are file modes? List any four file-modes with their purpose. (1,4)

Q 7

(a) Explain three major components of Standard Template Library. (2*3=6)

(b) Write a C++ program to swap two numbers using Bitwise XOR Operator. (4)