

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST - II (EXAMINATION – 2022)

B.Tech. - III Semester (CSE & IT)

COURSE CODE (CREDITS): 18B11CI311 (3)

MAX. MARKS: 25

COURSE NAME: Object-Oriented Systems and Programming

COURSE INSTRUCTORS: A.Kumar, D.Gupta, H.Jindal & S.Sharma

MAX. TIME: 1 Hr. & 30 Min.

Note: All questions are compulsory. Marks and COs are indicated against each question in square brackets.

Q1.	Consider an inventory of products in a store. One way of keeping the details of the products is to record their product code, cost and total items in the stock. Write a class CStock1 to represent the same. Alternatively, we can simply specify the product code and the value of the item (which depends on the cost of the product) in the stock. Write a class CStock2 to represent the same. Finally, write a conversion routine to convert data of CStock1 into CStock2 and invoke this routine in the main function.	[3]	CO5
Q2.	Write a program to create a file - MyJournal.txt and write the following text into it: <i>Always give your best!</i> Now use following file pointers (new line separated) with corresponding file stream object, close the file and finally, find the output denoting the file pointer positions: tellp(); seekp (-5, ios::cur); tellp(); seekg (10, ios :: beg); tellg();	[3]	CO6
Q3.	Write a C++ program to explain the diamond problem which leads to ambiguity in multiple inheritance. Further, explain the steps to handle this problem.	[3]	CO3
Q4.	Create a function template which adds two numbers of following data type and returns a value having the datatype same as the first number: a) int and float b) float and int c) char and int	[3]	
Q5.	Describe the following (<i>max. 8-10 sentences</i>) : a) How the operands are passed (<i>i.e. passed by reference or passed by value or both</i>) while overloading increment or decrement operators using a friend function? Justify your answer. b) Whether C++ language supports virtual constructor or not. Justify your answer.	[2*5 = 10]	CO4 CO5 CO6

	<p>c) Whether a generic function can be overloaded or not. Justify your answer with a suitable example.</p> <p>d) File modes: i) ios::app ii) ios::ate iii) ios::nocreate iv) ios::trunc</p> <p>e) Object slicing with a suitable example</p>		
Q6.	<p>What is the output (if any) of the following program? Please give brief explanation (2-3 sentences) in support of your answer. Assume that following statements are already there:</p> <pre>#include <iostream> using namespace std;</pre>	[1] [1] [1]	CO3 CO4
a)	b)	c)	
<pre>class CBase { public: int iCount; CBase () { iCount = 0;} }; class CDerived : protected CBase { public: void funct () { int a; a = iCount; } }; int main() { int a; CDerived obj; a = obj.iCount; return 0; }</pre>	<pre>class CBase { public: CBase() { cout << "CBase\n"; } ~CBase() { cout << "CBase Destructor\n"; } }; class CDerived: public CBase { public: CDerived() { cout << "CDerived\n"; } ~CDerived() { cout << "CDerived Destructor"; } }; int main() { CBase *obj = new CDerived(); delete obj; return 0; }</pre>	<pre>class CBase { public: virtual void Area () = 0; }; class CDerived1 : public CBase { }; class CDerived2 : public CDerived1 { void Area () { cout << "Hello"; } }; int main(void) { CBase *ptr; CDerived1 obj1; CDerived2 obj2; ptr = &obj2; ptr -> Area (); return 0; }</pre>	