

Enrollment No.....



Faculty of Science  
End Sem (Odd) Examination Dec-2019  
BC3SE01 OOP using C++

Programme: B.Sc. (CS)

Branch/Specialisation: Computer  
Science**Duration: 3 Hrs.****Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Which of the following concepts of OOPS means exposing only necessary information to client? 1  
 (a) Data hiding (b) Encapsulation  
 (c) Abstraction (d) Data binding
- ii. How many types of polymorphisms are supported by C++? 1  
 (a) 1 (b) 2 (c) 3 (d) 4
- iii. Which of the following is the correct class of the object cout? 1  
 (a) iostream (b) istream (c) ostream (d) ifstream
- iv. Which of the following approach is adapted by C++? 1  
 (a) Top-down (b) Right-left (c) Left-right (d) Bottom-up
- v. Which of the following is not a type of constructor? 1  
 (a) Copy constructor (b) Friend constructor  
 (c) Default constructor (d) Parameterized constructor
- vi. Which of the following is not the member of class? 1  
 (a) Static function (b) Friend function  
 (c) Const function (d) Virtual function
- vii. Which of the following cannot be used with the keyword virtual? 1  
 (a) Constructor (b) Class  
 (c) Member functions (d) Destructor
- viii. Which inheritance type is used in the class given below? 1  
*class A : public X, public Y*  
*{ }*  
 (a) Multiple inheritance (b) Hybrid inheritance  
 (c) Hierarchical Inheritance (d) Multilevel inheritance

P.T.O.

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- ix. To perform File I/O operations, we must use \_\_\_\_\_ header file. **1**  
 (a) < ifstream> (b) < ofstream>  
 (c) < fstream> (d) < iostream>
- x. Generic catch handler is represented by \_\_\_\_\_. **1**  
 (a) catch() (b) catch(---)  
 (c) catch( void x) (d) catch(...)

- Q.2 i. Define data encapsulation. How is data encapsulation performed in C++? Write syntax. **2**  
 ii. Explain the compilation process of a C++ program. **3**  
 iii. Differentiate between static binding and dynamic binding giving example. **5**

OR iv. Write the advantages and disadvantages of Object-oriented programming. **5**

- Q.3 i. What is the difference between structure, union and a class? **4**  
 ii. Write note on implicit and explicit type conversions. **6**  
 OR iii. How is a static data member different from an auto data member? Explain giving example. **6**

- Q.4 i. What is Inline function? Write its advantage? **3**  
 ii. Differentiate between call by value and call by reference through programming example. **7**  
 OR iii. What are constructors and destructors? In what sequence are base class and derived class constructors and destructors called in inheritance? **7**

- Q.5 i. Write a program in C++ to print the factorial of a given number using class, object and member function. **4**  
 ii. Explain function overloading and operator overloading giving one example for each. **6**  
 OR iii. Write a detailed note on classification of inheritance. **6**

- Q.6 Attempt any two:  
 i. What are the various file opening modes? How are they different from each other? How the end of file can be detected? **5**

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- ii. Write note on Command Line Arguments and its utility. **5**  
 iii. Write an object oriented program to store employee records like Name, Emp\_code, Department, Salary etc.. The details of the employee must also be written to a file named “empdata.txt”. **5**

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**Marking Scheme**  
**BC3SE01 OOP using C++**

Q.1	i.	Which of the following concepts of OOPS means exposing only necessary information to client?	1
		(a) Data hiding	
	ii.	How many types of polymorphisms are supported by C++?	1
		(b) 2	
	iii.	Which of the following is the correct class of the object cout?	1
		(c) ostream	
	iv.	Which of the following approach is adapted by C++?	1
		(d) Bottom-up	
	v.	Which of the following is not a type of constructor?	1
		(b) Friend constructor	
	vi.	Which of the following is not the member of class?	1
		(b) Friend function	
	vii.	Which of the following cannot be used with the keyword virtual?	1
		(a) Constructor	
	viii.	Which inheritance type is used in the class given below?	1
		<i>class A : public X, public Y</i> <i>{ }</i>	
		(a) Multiple inheritance	
	ix.	To perform File I/O operations, we must use _____ header file.	1
		(c) <fstream>	
	x.	Generic catch handler is represented by _____.	1
		(d) catch(...)	
Q.2	i.	Defining data encapsulation	1 mark
		Syntax	1 mark
	ii.	Compilation process of a C++ program	3
	iii.	Difference b/w static binding and dynamic binding	5
		1 mark for each difference	(1 mark * 5)
	iv.	Object-oriented programming	5
OR		Advantages	2.5 marks
		Disadvantages	2.5 marks
Q.3	i.	Difference between structure, union and a class	4
		1 mark for each difference	(1 mark * 4)

	ii.	Implicit type conversions	3 marks	6
		Explicit type conversions	3 marks	
	iii.	Static data member different from an auto data member	5 marks	
OR		Example	1 mark	6
Q.4	i.	Definition of Inline function	2 marks	3
		Advantage	1 mark	
	ii.	Call by value through programming example	3.5 marks	
OR		Call by reference through programming example	3.5 marks	7
	iii.	Constructors	3 marks	
		Destructors	3 marks	
		Explanation	1 mark	7
Q.5	i.	Program in C++ to print the factorial		4
		Input	1 mark	
		Logic	2 marks	
		Output	1 mark	6
	ii.	Function overloading	2 marks	
		Example	1 mark	
OR		Operator overloading	2 marks	6
		Example	1 mark	
	iii.	Inheritance	1 mark	
		Classification of inheritance.		6
		1 mark for each type (1 mark * 5)	5 marks	
Q.6		Attempt any two:		5
	i.	File opening modes	1 mark	
		Difference	3 marks	
		End of file	1 mark	5
	ii.	Command Line Arguments	3 marks	
		Its utility	2 marks	
	iii.	Object oriented program to store employee records		5
		Input	1 mark	
		Logic	3 marks	
		Output	1 mark	

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