Sub Code:RCAI301

Paper Id: 206301 Roll No:

MCA (INT)
(SEM III) THEORY EXAMINATION 2019-20
OBJECT ORIENTED PROGRAMMING USING C++

Time: 3 Hours *Total Marks: 70*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14

a.	Write the features of object-oriented programming.
b.	Differentiate between procedural and object-oriented approach.
c.	Define derived attribute.
d.	What is the significance of scope resolution operator **": :"** ?
e.	Explain polymorphism with example.
f.	What do you mean by this pointer?
g.	Explain pure virtual function.

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21

a.	What is dynamic memory allocation? How allocated memory can be released?
b.	What is the difference between aggregation and generalization? Give suitable example.
c.	Discuss function templates by giving suitable examples.
d.	Define garbage collection and compaction? How it is handled?
e.	How objects are initialized in C++? Give example.

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7

(a)	Write a program in C++ to differentiate between function overloading and function overriding
(b)	Write a program in C++ using class and objects. Take array of objects and explain how it can be used.

4. Attempt any *one* part of the following: 7 x 1 = 7

(a)	How File handling is done in C++? Explain with a suitable example.
(b)	What is an Exception and how is it handled in C++? When should a program throw an exception? Describe with suitable example.

5. Attempt any *one* part of the following: 7 x 1 = 7

(a)	What is operator overloading? Can a destructor be overloaded for any class? Create a class distance to store the distances in feet and inches and overload : **"<" or ">"**.
(b)	What is constructor? Explain dynamic constructor with example. When writing a class constructor, how do you decide what to put in the initialization and to put in the body of the constructor?

6. Attempt any *one* part of the following: 7 x 1 = 7

(a)	What is the friend function? What is the merit and demerit of using friend function? Friend function works as a bridge between classes. Comment.
(b)	Define Inline function using an example. Why inline function is mostly used instead of plain old #define macros?

7. Attempt any *one* part of the following: 7 x 1 = 7

(a)	What is a virtual base class? Why it is important to make a class virtual?
(b)	What is a destructor? Illustrate memory allocation to an object using destructor. Compare early binding and late binding.

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