

Roll No.

Subject Code—4114

M.C.A. (Third Year) EXAMINATION

(5 Years Integrated Course)

MCA-302

OBJECT ORIENTED PROGRAMMING

USING C++

May 2016

Time : 3 Hours

Maximum Marks : 100

Note : Attempt any *Five* questions.

1. (a) What is polymorphism ? How is polymorphism implemented ? What is the advantage of run-time polymorphism and compile-time polymorphism ? **10**
- (b) What ~~difference~~ between :
 - (i) Base class and super class
 - (ii) Derived class and subclass.

5×2=10

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2. (a) Explain the concept of abstraction. When should abstraction be used in a program ? 10
- (b) What is Friend Function ? What are the merits and demerits of using friend function ? 10
3. (a) What is an Operator Function ? Describe the syntax of an operator function. 10
- (b) What is containership ? How does it differ from inheritance ? What are the different forms of inheritance ? Give an example for each. 10
4. (a) What is virtual function ? Why do we need virtual function ? When do we make a virtual function 'pure' ? 10
- (b) What is the basic difference between manipulators and *ios* member functions in implementation ? Give example. 10

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5. (a) What is difference between opening a file with a constructor function and opening a file with open () function ? When is one method preferred over the other ? 15
- (b) Explain the term composition with suitable example. 5
6. (a) What is the need of initialization of objects using constructors ? What could be the problems if constructors are not provided in C++ ? 10
- (b) Suppose the class is meant for providing information about teachers to students. What are the function members you would like to have in that class ? 10
7. (a) Differentiate between
- (i) Overload function and function templates
- (ii) Class template and template class.
- (b) Write a function template for finding the minimum value contained in an array. 10

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8. (a) What is exception handling in C++ ?
What are the advantages of using exception handling mechanism in a program ? 15
- (b) What are constructors and destructors ? When are they called ? 5