

Roll No.

Subject Code—6712

M.C.A. (Third Year) EXAMINATION

(5 Years Integrated Course)

MCA-302

**OBJECT ORIENTED PROGRAMMING
USING C++**

Time : 3 Hours

Maximum Marks : 100

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) What are abstraction and encapsulation ?
How are these implemented in C++ ?
Explain by giving an example.
- (b) What are different types of relationship used in object modelling ? Explain each with examples.
2. (a) What is Copy Constructor ? Given an example.

- (b) Distinguish between local and global class by giving examples.
3. (a) What are the rules to overload a unary operator ? Write a program to overload '+' operator to increment distance object. Distance is measured in feet and inches.
- (b) What are the rules to overload a binary operator ? Write a program to overload '*' operator to multiply two objects of one-dimensional array.
4. (a) What is template function ? Write a template function to find largest of three numbers.
- (b) What is template class ? Write a template class.
5. (a) Explain the exception handling model supported by C++.
- (b) How can you restrict a function to throw some particular exceptions ? Explain with an example.

6. (a) What is Virtual function ? When do you need it ?
- (b) What is multilevel inheritance ? How is it implemented in C++ ? Explain with an example.
7. (a) Draw the hierarchy of console I/O classes. Explain the purpose of each class in brief.
- (b) What are Manipulators ? Explain any *four* manipulators with the help of examples.
8. (a) How can you open and close a data file ? How can you test for errors in file handling ? Explain.
- (b) How can you read and write objects to a file ? Give an example.