

This question paper contains 2 printed pages.

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Your Roll No.

MECTA

J

COMPUTER TECHNOLOGY AND APPLICATION

Paper – CS.506

(Object-Oriented Programming Systems)

Time : 3 hours

Maximum Marks : 100

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

Answer total five questions.

Q. No. 1 is compulsory.

1. (a) Distinguish between data abstraction and data encapsulation. 4
- (b) What do you mean by dynamic binding? How is it useful in OOP? 4
- (c) What are the advantages of operator overloading? 4
- (d) When does an ambiguity occur in multiple inheritance? 4
- (e) When do we declare a member of a class static? 4
2. (a) What do you mean by overloading of a function? When do we use this concept? Explain with example. 10

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- (b) Write a program in C++ that consists of two classes time 12 and time 24. The first one maintains time on a 12-hour basis, whereas the other one maintains it on a 24-hour basis. Provide conversion functions to carry out the conversion from object of one type to another. 10
3. (a) What is a friend function and when should a function be made friend? Also explain the merits and demerits of using friend functions. 10
- (b) Explain the difference between a public member and a private member of a class with the help of a C++ program. 10
4. Write a program in C++ that illustrates the implementation of both multilevel and multiple inheritance. 20
5. Write a C++ program to overload the following operators +, -=, <= and ==. 20
6. What does polymorphism mean in C++ language? How is polymorphism achieved at run time? Explain with the help of a C++ program. 20
7. Explain any *two* of the following:
- (i) Constructors and Destructors
 - (ii) Object Oriented Programming Languages
 - (iii) Object oriented analysis and design. 10+10