

Roll No.

Exam Code : D-22

Subject Code—58467

B. Sc. EXAMINATION

(Main/Re-appear) (Batch 2018 Onwards)

(Fifth Semester)

COMPUTER SCIENCE

CCsL-503—First Paper

Object Oriented Programming Using 'C++'

Time : 3 Hours

Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory.

1. (a) Write the applications of Object Oriented Programming. 2
- (b) What do you mean by object oriented languages ? 2
- (c) Write the characteristics of a static member function. 2

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- (d) How can member function of a class be defined outside the class ? 2
- (e) What are the main characteristics of destructor ? 2
- (f) Write the syntax and use of dynamic memory management operators. 2
- (g) When do we make a class virtual ? 2
- (h) What is an abstract class ? 2

Unit I

- 2. (a) Explain the structure of a C++ program. 8
- (b) Explain the following manipulators with the help of an example : 8
 - (i) set w
 - (ii) set precision
 - (iii) set fill
 - (iv) endl
- 3. (a) Distinguish between the following terms :
 - (i) Objects and Classes

(ii) Data abstraction and Data encapsulation

(iii) Procedure oriented programming and object oriented programming.

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(b) What is the difference between reading a string str by the following two statements ? 4

(i) `char str[20];`

`cin>>str;`

(ii) `char str[20];`

`cin.getline(str, 20)`

Unit II

4. What do you mean by static data member ? Write its characteristics. Explain the use of static data member with the help of a program.

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5. What do you mean by friend function ? Write its characteristics suppose two different classes have one datamember each. Write a program to find greatest out of data members of these classes.

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Unit III

6. What is Constructor ? Explain its types with the help of a program. Also explain constructor overloading. 16
7. What is Operator Overloading ? Write rules of operator overloading. Write a program to overload binary + operator to add two complex numbers. 16

Unit IV

8. What is inheritance ? Write its advantages. What do you mean by visibility modifier, protected ? Why is it needed ? How is protected derivation different from public derivation and private derivation ? 16
9. Explain the following :
- (a) Multiple Inheritance 8
 - (b) Hierarchical Inheritance. 8