

B.Sc. V Semester
Session 2018-2019

CS-3501 Object Oriented Programming using C++

UNIT I

Introduction, OOPS languages, characteristics of OOP's languages, application of OOP's, OOP's paradigm, concepts: object, class, data abstraction, data encapsulation, inheritance, and polymorphism. Static and dynamic binding, message passing, benefits of OOP's, disadvantage of OOP's. Application of OOP's.

UNIT II

C++ programming basics, basic program structure ,preprocessor directive, data types, operators, manipulator, type conversions, C++ stream class. Control statement: for, do, while, do-while Decision statement if, if-else, switch-Case. Jump statement: break, continue, go to, exit.

UNIT III

Function and arrays. Classes and instances, defining classes in object oriented language, building and destroying instances (constructors and destructors), modifiers, friend and inline functions, string handling function.

UNIT IV

Data encapsulation, polymorphism, operator overloading, function overloading, virtual functions, Virtual Members.

UNIT V

Inheritance, reusability of code through inheritance, type of inheritance, Single Inheritance, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, Hybrid Inheritance, data abstraction, abstract classes. Templates and exception handling.

TEXT BOOK: Object oriented programming with c++ by Balaguruswamy. TMH Publishing

REFERENCE BOOKS:

1. C++, The Complete Reference, 4th Edition, Herbert Schildt, TMH.
2. C++ Primer, 3rd Edition, S.B.Lippman and J.Lajoie, Pearson Education.
3. The C++ Programming Language, 3rd Edition, B.Stroutstrup, Pearson Education.
4. OOP in C++, 3rd Edition, T.Gaddis, J.Walters and G.Muganda, Wiley DreamTech Press.
5. Object Oriented Programming in C++, 3rd Edition, R.Lafore, Galigotia Publications pvt ltd.
6. Computer Science, A Structured Programming Approach Using C++, B.A.Forouzan and R.F.Gilberg, Thomson

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PRACTICAL (OBJECT ORIENTED PROGRAMMING THROUGH C++)

1. Write a program to find the maximum of three using conditional operator.
2. Write a program to find the largest, second largest and third largest in a given array.
3. Write a program to generate Armstrong series.
4. Write a program to find the factorial of a given number.
5. Write a program to generate the Fibonacci series.
6. Write a program to check whether the given number is palindrome or not.
7. Write a program to find the GCD and LCM of two no's.
8. Write a program to print the diagonal elements of matrix.
9. Write a Program to demonstrate use of array of objects.
10. Program to demonstrate use of function overloading.
11. Write a function which accept object as a parameter and returns object.
12. Write a Program to demonstrate the virtual base class.
13. Write a Program to demonstrate use of polymorphism (virtual function).
14. Write a program to overload ++ operator to increment age of person by one month.
15. Write a program to illustrate the use of scope resolution operator.
16. Write a program to find the square root using inline function.
17. Write a program to illustrate the use of friend function.
18. Create two employee objects and display each object's yearly salary.
19. Give each employee a 10% raise and display each Employee's yearly salary again..
20. Write C++ program to create five object of book, get information of book using getdata() function including name, price, publication and author.

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