

23/5/13

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**B.E / B.Tech (Full Time) ARREAR END SEMESTER EXAMINATIONS, APR / MAY 2013**

**ELECTRICAL AND ELECTRONICS ENGG**

**II Semester**

**EE9152 OBJECT ORIENTED PROGRAMMING C++**

**{Regulation 2008}**

**Time : 3 Hours**

**Answer ALL Questions**

**Max. Marks 100**

**PART- A (10 x 2 = 20 Marks)**

1. Differentiate a method from a message.
2. What is encapsulation? How it helps the programmer to design the system better?
3. List out the rules used for defining Constructors.
4. Mention the advantages of using 'this' pointer.
5. Compare Static Binding with Dynamic Binding.
6. What is a Pure Virtual function?
7. Which operators could not be overloaded in a friend function? Why?
8. Differentiate a template class from a template function.
9. What happens when a catch handler throws an exception?
10. Write a C++ program to check whether the given string is palindrome or not.

**Part – B (5x16=80 marks)**

11. a) i) Compare Procedural programming with Object Oriented Programming. Write an example for each one to justify it. (8)  
ii) Write a C++ program to define a class named 'Car' with data members as Make, color, size and cost. Write member functions for reading values and printing values of car. Define one more class as Car collection which contain the member functions such as Add, Delete, Modify and Replace. Define Car Collection as a friend of Car Class and access its values. (8)
12. a) i) Why objects needed to be initialized using Constructors? What could be the problem if constructors are not initialized? Explain. (8)

ii) Write a C++ program which defines and uses Namespaces. (8)

(OR)

b) i) Write a class called **STRING** having an array of characters as data member. Provide suitable constructor and destructors for the class **STRING**. Write overloaded functions for the following operators: **!=** and **>>** (8)

ii) Create a Class **STUDENT** which contains Roll No, Name, Address and Marks as its attributes. Write suitable member functions to insert and display information. Define an array of 60 students in a class and display the names of the students who secured first, second and third rank. (8)

13. a) i) Create a class named **employee** with data members **firstname**, **last name** and member functions: **earnings** (Pure Virtual function) and **Print** (Virtual function). Derive a class called **boss** from **employee** and its data member is **weeklysalary** and member function: **set\_weekly\_salary**. Calculate and print the earnings appropriately. (10)

ii) Discuss about the problems that may be faced in Multiple Inheritance. (6)

(OR)

b) i) How do you derive a class from an already derived class? Explain. (6)

ii) Develop a class **Shape** from which **TwoDimensional Shapes** and **ThreeDimensional Shapes** are derived. **TwoDimensionalShapes** consist of **Square** and **Rectangle** as child classes whereas the **ThreeDimensionalShapes** consist of **Sphere** and **Cube**. Each **Two Dimensional Shape** could contain the function **getArea()** to calculate the area of a two dimensional shape. **ThreeDimensional Shapes** should have the member functions **getArea()** and **getVolume()** to calculate the surface area and the volume of the shapes. Determine whether each **Shape** is 2-D or 3-D and display its area if it is a 2-D. If the shape is 3-D, display its area and volume. (10)

14. a) i) Compare different casting operators with suitable examples. (8)

ii) Write a C++ program to sort a list of strings using function templates. (8)

(OR)

b) Write short notes on:

i) Run Time Type Information. (8)

ii) Standard Templates Library (8)

15. a) i) Explain the components of Error Handling mechanism in detail with proper examples. (10)
- ii) Discuss on the limitations of Exception Handling. (6)

(OR)

- b) Write a C++ program to implement a Stack (using Stack class). Class should throw an exception when the stack overflow or underflow takes place. Also when overflow occurs, it should ask the user for increasing the stack size. If the user says 'yes', it should respond back by increasing the stack size. (Use Dynamic Memory allocation for stack implementation). (16)

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