ST.FRANCIS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF INFORMATION TECHNOLOGY

Subject: Paradigms and Computer Programming Fundamentals

Class/Semester: SE /III A and B

Chapter -2 Important Questions/ Question Bank

Short Questions

1. Explain three defining characteristics of object oriented programming language

2. Define objects, classes with examples.

3. Explain the distinction between private, protected and public class members in C++ and Java. Define the significance of default access specifier

4. Name three important benefits of

    a. Data abstraction and data encapsulation

    b. Polymorphism

    c. Inheritance

5. What is the purpose of **::** operator in C++

6. Explain constructors and destructors with example

7. Give two other terms of base class and derived class

8. Explain the significance of *this* parameter in object oriented programming language

9. List different types of inheritance. Highlight the syntax for each

10. What is polymorphism. Explain compile time polymorphism with examples using OOP paradigm

11. Explain run time polymorphism with example using OOP paradigm

Long Questions

1. Explain the difference between dynamic and static method binding (i.e between virtual and non virtual methods)

2. Explain abstract class and methods with respect to Java and C++. Use examples

3. Does a constructor allocate space for an object? Explain **[Refer ML Scott- 470-478]**

4. Highlight/Discuss the important issues related to initialization and finalization of an object **[Refer ML Scott- 469-471]**

5. Why is object initialization simpler in a language with a reference model of variables (as opposed to a value model) **[Refer ML Scott- 471-473]**

6. Explain the importance of virtual methods for object closures. What is a vtable? How is it used? **[Refer ML Scott- 487-489]**

7. Write short note on-

a. Data encapsulation (definition, need, examples in C++ and Java, difference wrt abstraction)

b. Data abstraction (definition, need, one example each in C++ and Java, difference wrt encapsulation)

c. Inheritance (Definition, need, classification, syntax of each type, access modifiers)

Self Study Questions

1. Describe the key design difference between Smalltalk, Eiffel, and C++ on the one hand, and Oberon, Modula-3, and Ada 95 on the other. (Hint: paradigm, advantages, important features, memory management and allocation, stack operation, events, function)

2. How do the rules for member name visibility in Smalltalk and Objective-C differ from the rules of most other object-oriented languages?

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