

II B.Tech. II Semester Regular Examinations, April/May -2005
OBJECT ORIENTED PROGRAMMING AND APPLICATIONS
(Instrumentation & Control Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What are the characteristics fundamental to Object Oriented Programming according to Alan Kay. Discuss them.
(b) Object Oriented Programming is “animistic”. Discuss.
(c) Write a class hierarchy for various material objects and explain it clearly.
2. (a) Explain with an example, how CRC cards are used in recording responsibilities.
(b) Describe about Interactive Intelligent Kitchen Helper. Explain how this can be divided into components while implementing it in Object-oriented approach.
3. Contrast the encapsulation provided by the class mechanism with the encapsulation provided by the module facility. How are they different? How are they same?
4. Explain clearly with suitable classes, methods, and attributes one solution to the Eight-Queens puzzle in C++.
5. (a) Describe the Inheritance in Objective-C with an example.
(b) What is multiple inheritance? List different object-oriented programming languages, which supports this feature.
6. (a) What is multiple inheritance of interfaces in Java? Give one example to it.
(b) Give two examples of multiple inheritance in non-computer-associated situations.
7. Explain clearly with suitable examples the Binding and Message lookup in Java.
8. What is an Application Framework? State some application frameworks and explain them clearly.

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1. (a) State and explain the David Parnas principles for proper use of modules.
(b) What are abstract data types? Explain with an example. Give the conditions to be satisfied to build the abstract data types.
2. (a) What is meant by CRC cards? How these are useful in OOD?
(b) What is Cohesion and Coupling? How these should be useful for an effective OOD.
3. (a) Does Java support operator overloading?
(b) What is meant by garbage collection? What is the need of it? Describe the languages which support it.
4. (a) What is stack-based storage allocation? Give its advantages and disadvantages.
(b) Explain "Memory leak". How memory leak can be avoided in C++?
5. (a) Discuss subclassing for Variance and subclassing for Combination. Give one example to each.
(b) Describe with an example the Inheritance in Object Pascal.
6. (a) Differentiate between private inheritance and protected inheritance in C++.
(b) Discuss the issues in Binding and Message Lookup
7. (a) What is virtual and non-virtual overloading? Give suitable examples.
(b) Explain about polymorphic variables in C++.
8. (a) Compare Facade intermediary pattern with State intermediary pattern.
(b) Explain Iterator traversal pattern with an example.

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1. (a) What is meant by strongly typed and loosely typed language. Give one example to each type.
(b) What are Eskimos languages? How are they related to OOP?
(c) Discuss about Exceptions. State some OOP languages which provides Exception handling feature.
2. (a) State and describe the responsibilities of a club. Identify atleast six types of members i.e president, vice-president, member etc. For each member type, describe the responsibilities and collaborators.
(b) Create a scenario for above club using an interaction diagram.
3. (a) What is inline function in C++? Give an example.
(b) What is class description and class implementation in C++? Explain with an example.
4. (a) Discuss the issues in creation and initialization.
(b) What are the errors that are common when a programmer is required to manage the dynamic memory area?
5. (a) Discuss subclassing for Variance and subclassing for Combination. Give one example to each.
(b) Describe with an example the Inheritance in Object Pascal.
6. (a) What is composition? Describe using of composition with an example.
(b) What are the two mechanisms for software reuse? Discuss them briefly.
7. Explain in detail about Polymorphism in C++. Give suitable examples.
8. (a) Compare Proxy intermediary pattern with Translator intermediary pattern.
(b) Compare Interpreter traversal pattern with Iterator traversal pattern.

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1. (a) What is an object? What is meant by object oriented software development?
(b) "Object Oriented Programming (OOP) is a revolutionary idea". Discuss.
2. (a) State and describe the responsibilities of a business of your interest. Identify atleast six types of members i.e secretary, president, worker etc. For each member type, describe the responsibilities and collaborators.
(b) Create a scenario for the above business organization using an interaction diagram.
3. Do you think it is better to have the access modifiers "private" and "public" associated with every individual object as in Java, or to create separate areas in the declaration as in C++. Give reasons to support your view?
4. (a) What is the difference between constants and Immutable values?
(b) Explain with an example the mechanism of creation of objects and initializing its attributes in C++.
5. (a) What is the necessity of function overriding? Give a real world example to it.
(b) Describe the arguments that can be made in data types associated with a parent class to the data types associated with a derived class.
6. What is multiple inheritance? Illustrate the use of it in C++ with an example.
7. (a) Discuss about polymorphic functions in Dynamic languages.
(b) What is strongly typed polymorphism? Give one OOP language, which supports it.
8. (a) What is meant by Classifying Design Patterns?
(b) Compare Intermediary pattern and Double-Dispatching pattern.
