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06CS71

Seventh Semester B.E. Degree Examination, December 2012
Object Oriented Modeling and Design (OOMD)

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
atleast TWO questions from each part.**

PART – A

- 1 a. What is object orientation? Explain its aspects with an example. (06 Marks)
b. What is model? What are its advantages? Briefly discuss about three models. (08 Marks)
c. What is generalization? Briefly discuss the generalization of equipments. (06 Marks)
- 2 a. Define the following terms, with an example : (08 Marks)
i) Enumerations ii) Association ends iii) Aggregation iv) Abstract classes.
b. With respect to multiple inheritance, briefly discuss about (06 Marks)
i) Multiple classification ii) Workarounds.
c. What do you mean by states and events? Draw the state diagram for a telephone line system. (06 Marks)
- 3 a. What is concurrency? Explain the aggregation concurrency, with an example. (06 Marks)
b. What are sequence models? Draw the sequence model for on – line stock broker system. (06 Marks)
c. Briefly discuss the usecase relationships and draw the usecase diagram of stock brokerage system. (08 Marks)
- 4 a. Briefly discuss the software development stages. (08 Marks)
b. Identify the classes for ATM bank system. What criteria would you take into consideration to select right classes? Explain. (08Marks)
c. List the steps to construct domain state model. (04 Marks)

PART – B

- 5 a. With a neat activity diagram, explain the card verification activity of ATM bank system. (06 Marks)
b. Define the following terms : i) Libraries ii) Frameworks iii) Patterns. (06 Marks)
c. Explain the steps in designing a compiler by using batch transformation. (08 Marks)
- 6 a. Briefly discuss the design optimization and explain its tasks, with an example. (08 Marks)
b. List and explain the steps involved in organizing of a class design. (06 Marks)
c. Differentiate between forward engineering and reverse engineering. (06 Marks)
- 7 a. What is a pattern? Explain the model – view controller design for software architecture, with OMT diagram. (06 Marks)
b. Explain the client – dispatcher – design pattern. (08 Marks)
c. List and explain different pattern categories. (06 Marks)
- 8 a. Explain the command processor design pattern. (08 Marks)
b. What are idioms and styles? Explain with the help of an example, a style guide idiom. (06 Marks)
c. Explain the publisher – subscriber design pattern. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

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06CS/IS72

Seventh Semester B.E. Degree Examination, December 2012
Software Architecture

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART - A

1. a. Explain in detail the building of Architecture Business cycle by identifying the factors of influence. (10 Marks)
 b. Briefly explain, what does software architecture constitute. (05 Marks)
 c. Describe the Architectural structure of a system. (05 Marks)
2. a. Enlist the different Architectural styles and discuss in brief Event – based, Implicit Invocation. (06 Marks)
 b. Explain the software paradigm for process control. (04 Marks)
 c. State the problem of KWIC. Propose Abstract Data types and Implicit Invocation styles to implement solutions for the same. (10 Marks)
3. a. Explain quality attribute scenarios. (06 Marks)
 b. Distinguish between availability and modifiability scenarios. (04 Marks)
 c. Explain the following with respect to tactics :
 i) Fault prevention ii) Defer binding time iii) Resource arbitration
 iv) Internal monitoring v) Run time tactics. (10 Marks)
4. a. Explain layers architectures pattern, with sketches and CRC cards. (06 Marks)
 b. List the components of a pipe and filter architecture pattern and depict the dynamics behaviour of it. (08 Marks)
 c. Explain the forces that influence solution to problem based on black board pattern. (06 Marks)

PART - B

5. a. Describe the structure of Broker architectural pattern with their respective CRC cards. (08 Marks)
 b. Explain the dynamic behaviour of MVC pattern, with sketches. (08 Marks)
 c. List the benefits of PVC pattern. (04 Marks)
6. a. Enumerate the implementation of a Micro Kernel pattern. (10 Marks)
 b. Explain the reflection architectural pattern and its known uses. (10 Marks)
7. a. Enlist the benefits of whole – part pattern. (04 Marks)
 b. Discuss the structure, dynamics and implementation of Master – Slave pattern. (10 Marks)
 c. List the known uses and liabilities of proxy pattern. (06 Marks)
8. a. Explain ADD and its steps. (07 Marks)
 b. What are views? How they serve the architecture, with examples. (06 Marks)
 c. List the steps in documenting a view for architecture. (07 Marks)

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06CS73

Seventh Semester B.E. Degree Examination, December 2012
Programming the Web

Time: 3 hrs.

Max. Marks: 100

*Note: Answer FIVE full questions, selecting
at least TWO questions from each part.*

PART - A

- 1 a. What is hyper text? Explain HTTP phases. Mention various methods and status codes of HTTP. (10 Marks)
- b. Give the standard structure of XHTML document. How line breaks, headings and fonts are handled in XHTML? (10 Marks)
- 2 a. How lists are handled in XHTML? Design an XHTML code for illustrating nested lists. (10 Marks)
- b. Design an XHTML code for constructing a sample class timetable to illustrate table handling. (10 Marks)
- 3 a. What are the different levels of style sheets? Give an example code for each. (08 Marks)
- b. What are the different selector forms provided in CSS? Illustrate the use of each with suitable example. (12 Marks)
- 4 a. What are uses of Java Script? Are OOP concepts incorporated in Java Script? How objects are handled in it? (08 Marks)
- b. Which are the methods used for accepting inputs from the keyboard and for displaying results on the screen? Write a Java Script for accepting the user name and display it on the browser window. (12 Marks)

PART - B

- 5 a. What is an event? List the most commonly used events and their tag attributes. (10 Marks)
- b. Briefly discuss the event handling from body elements and button elements in Java Script. (10 Marks)
- 6 a. How positioning and moving of elements are done in dynamic XHTML? (08 Marks)
- b. How stacking of elements done in Java Script/XHTML? Write a program to illustrate dynamic stacking of images. (08 Marks)
- c. What are the standard values for visibility property? How are they used in dynamic XHTML? (04 Marks)
- 7 a. What is a namespace? What is its use in XML? (04 Marks)
- b. How elements and attributes are declared in a DTD? Give a sample DTD for defining on airplane. (10 Marks)
- c. Explain the transformation process by an XSLT processor with a flow diagram. (06 Marks)
- 8 a. What are the three categories of Perl variables How are they handled? Give examples. (09 Marks)
- b. How files are handled in Perl? List File Use Specifications and their meaning. (05 Marks)
- c. What is a query string? How is it transmitted to the server with the GET and POST methods? (06 Marks)

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06CS74

Seventh Semester B.E. Degree Examination, December 2012
Embedded Computing Systems

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. Give the characteristics and constraints of embedded system. (04 Marks)
- b. Define design metrics in an embedded system. What are the different computing design metrics? What are the challenges faced in designing an embedded system. (10 Marks)
- c. Describe the software tools used for designing an embedded system. (06 Marks)
- 2 a. With neat sketch, explain synchronous serial input and synchronous serial output operation. (10 Marks)
- b. Briefly explain the skills required for an embedded system designer. (06 Marks)
- c. Write a note on SDIO (secure digital input output). (04 Marks)
- 3 a. Describe: i) Timing device; ii) Counting device; iii) Timer cum counting device. (06 Marks)
- b. Explain watch dog timer with any one its applications. (06 Marks)
- c. With neat sketch, explain the control bit format in I²C bus protocol. (08 Marks)
- 4 a. What is interrupt vector? Explain various mechanism of interrupt vector with suitable examples. (10 Marks)
- b. Differentiate between device driver functions and ISR functions. (05 Marks)
- c. Explain the role of device drivers in interaction with device hardware with suitable example. (05 Marks)

PART – B

- 5 a. Explain the modeling of a multi-processor system. (07 Marks)
- b. Distinguish between function, ISR and Task. (06 Marks)
- c. Define process and tasks. Explain the tasks with their states. (07 Marks)
- 6 a. Describe any four RTOS timer functions and the actions on calling these functions. (04 Marks)
- b. Explain file system organization and implementation in an OS for an embedded system. (08 Marks)
- c. Explain process creation and management of created process. (08 Marks)
- 7 a. Briefly explain the design principles when using an RTOS to design an embedded system. (10 Marks)
- b. List any four common RTOS task scheduling models. (04 Marks)
- c. Describe fixed real time scheduling model with an example. (06 Marks)
- 8 a. What are the features of integrated development environment (IDE)? Explain. (07 Marks)
- b. Describe the platform dependency issues and the need for appropriate OS-hardware interface functions. (08 Marks)
- c. Discuss the limitations of simulation with appropriate illustration. (05 Marks)

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06CS/IS753

Seventh Semester B.E. Degree Examination, January 2013
Java and J2EE

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. List and explain the java buzzwords. (10 Marks)
- b. How arrays defined and used in Java? (05 Marks)
- c. Discuss the labeled break and continue statements. (05 Marks)
- 2 a. What is meant by instance variable hiding? How to overcome it? (04 Marks)
- b. WAP in JAVA to implement a stack that can hold 10 integer values. (06 Marks)
- c. What is an exception? Give an example for nested try statements. (06 Marks)
- d. List Applet initialization and termination methods. Write a Java Applet that sets the background color to cyan and foreground color to red and outputs a string message "A simple Applet". (04 Marks)
- 3 a. What is multithreading? Write a program to create multiple threads in JAVA. (10 Marks)
- b. Discuss the significance of synchronization in Java. (06 Marks)
- c. Briefly explain the role of: (04 Marks)
 - i) ActionEvent class
 - ii) AdjustmentEvent class.
- 4 a. Differentiate between AWT and swings. (05 Marks)
- b. Explain the MVC architecture of swings. (05 Marks)
- c. Describe the different types of swing buttons. (10 Marks)

PART – B

- 5 a. Explain J2EE multitier architecture with a neat diagram. (05 Marks)
- b. Describe the various steps of JDBC process with code snippets. (10 Marks)
- c. What is meant by scrollable result set? Explain. (05 Marks)
- 6 a. Write a program using servlet which contains HTML page to accept username and display greeting message as "Hello username, How are you?" in the browser window. (08 Marks)
- b. Briefly explain the following: (06 Marks)
 - i) Servlet interface
 - ii) Generic servlet class
 - iii) Cookie class
- c. Illustrate the use of session information in servlets. (06 Marks)
- 7 a. Define JSP. Explain the two types of control statements used in JSP by taking suitable examples. (10 Marks)
- b. Write a JSP program to create and read a cookie called "EMPID" that has a value of AN2356. (05 Marks)
- c. What is RMI? Briefly explain the working of RMI in JAVA. (05 Marks)
- 8 a. Describe the concept of deployment descriptors. (08 Marks)
- b. Explain the functions of EJB transaction attributes. (08 Marks)
- c. Briefly discuss the significance of session Java Bean. (04 Marks)

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06CS/IS761

Seventh Semester B.E. Degree Examination, January 2013

C# Programming and .NET

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. Explain the following common type system:

i) Class	ii) Structure	iii) Delegate	iv) Members	(08 Marks)
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 b. Briefly explain the core features of .NET. (06 Marks)
 c. Briefly explain the features of C# language. (06 Marks)

- 2 a. Explain the following output options of the C# compiler csc.exe:

i) /out	ii) /target : exe	iii) /target : library	iv) /target : module	
v) /target : winexe	vi) /doc	vii) @	viii) /main	(08 Marks)

 b. What is response file in C#? Why it is used? Create a response file with a name TestApp.rsp, and show how it is used to build applications. (04 Marks)
 c. Explain any eight C# preprocessor directives. (04 Marks)
 d. Write a C# program to display the current .NET development machine details. (04 Marks)

- 3 a. Mention the different form of main methods in C# and explain why its type signature contains public and static keywords. (04 Marks)
 b. Write a C# program to accept three numbers from the command line, and print the biggest. (02 Marks)
 c. Explain the method parameter modifiers in C# with code snippets. (12 Marks)
 d. Explain the following methods of System.Object:

i) Equals ()	ii) Finalize ()	(02 Marks)
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- 4 a. List the differences between value type and reference type in C#. (06 Marks)
 b. Explain the two techniques to preserve the integrity of state data in C#, illustrate with code snippets. (06 Marks)
 c. Explain the two forms of relationships in C# inheritance with a real world examples. (04 Marks)
 d. In C# how you can determine whether a given base class reference is actually referring to a derived type or not? Illustrate with code snippets. (04 Marks)

PART – B

- 5 a. Define bugs, errors and exceptions with examples. (03 Marks)
 b. Name the two descendent classes of System.Exception class and define their roles. (03 Marks)
 c. Mention the rule of thumb when you are constructing multiple catch blocks for a single try block, illustrate with code snippets. (04 Marks)
 d. Mention the rules of .NET memory management, and explain in detail how CLR performs a garbage collection. (10 Marks)

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- 6 a. How shallow copy and deep copy of an object is achieved in C#? Write a programs in C# to demonstrate both. (05 Marks)
- b. List the member functions of queue and stack classes. Write separate programs to demonstrate both. (07 Marks)
- c. List the interfaces of System.Collections namespace and briefly explain their roles. (08 Marks)
- 7 a. Briefly explain the following:
- i) Callback interfaces (05 Marks)
 - ii) C# delegate keyword (10 Marks)
 - iii) C# event keyword (05 Marks)
- b. Illustrate the use of callback interfaces with a C# program. (10 Marks)
- c. Write a program in C# to illustrate how delegate object is used to call methods dynamically. (05 Marks)
- 8 a. Briefly explain the benefits of .NET assemblies. (05 Marks)
- b. Compare private and shared assemblies. (03 Marks)
- c. Mention the major elements of .NET binaries, and explain each. (10 Marks)
- d. Briefly explain the types of views of an assembly. (02 Marks)

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