

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular), April-May 2016
M. Tech in Computer Science Engineering, Semester II



Subject Code: MTCS123

Roll No.....

Subject Name: Object-Oriented Analysis and Design

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.

Q.1A Objective type multiple choice questions (10 questions @ 1 mark) 10

- i. In a DFD external entities are represented by a
(a) Rectangle (b) Ellipse (c) Diamond shaped box (d) Circle
- ii. Scheduling project activities such as functional increments and test case development, which one of the following OOAD artifacts is the MOST useful?
(a) Use cases (b) Interaction diagrams
(c) Activity diagrams (d) Class Diagrams
- iii. Which of the following diagrams model the physical components of the system?
(a) use case diagram (b) collaboration diagram
(c) class diagram (d) component diagram
- iv. Identify the following who presented the object modeling technique (OMT).
(a) Booch (b) Jim Rumbaugh et al. (c) Jacobson et al. (d) Both (a) and (b)
- v. can be defined as most recent and perhaps the most comprehensive technique for solving computer problems.
(a) System Analysis (b) System Data (c) System Procedure (d) System Record
- vi. Which one of the following is the BEST set of potential use cases for the "Prepare for an Event" scenario in Figure Chef Scenario?
(a) Prepare for party, Display menu, Generate shopping list, Exclude ingredients on hand, Generate utensil list, Generate to do list
(b) Prepare for party, Display menu, Generate shopping list, Generate utensil list, Pack utensils, Generate to do list
(c) Display menu, Generate shopping list, Generate utensil list, Generate to do list
(d) Display menu, Generate shopping list, Exclude ingredients on hand, Generate utensil list, Generate to do list
- vii. Unified Process is a software development methodology which is:
(a) Component-driven (b) Iterative and incremental
(c) Related to Extreme Programming (d) Done in only one iteration
- viii. Which of the following are good practices to use while designing for reuse?
(a) Define a persistence framework that provides services for persisting objects.

	(b) Use design pattern, wherein complete solutions are already defined.	
	(c) Use controller objects to control the flow of processes in the system.	
	(d) Assign responsibilities to classes such that coupling between them remains low.	
ix.	The method of design encompassing the process of object oriented decomposition and a notation for depicting both logical and physical and as well as static and dynamic models of the system under design is known as:	
	(a) Object- Oriented Programming	(b) Object- Oriented Design
	(c) Object- Oriented Analysis	(d) None of the mentioned
x.	The testing of software without the knowledge of source code is called	
	(a) white box testing	(b) black box testing
	(c) gray box testing	(d) glass box testing
Q.2	Short answer type questions (4 questions @ 2.5 marks)	10
i.	Enlist the characteristics of a good pattern.	
ii.	Briefly compare the analysis phase of an object-oriented system with its subsequent design phase.	
iii.	Enlist the steps followed in the process of designing view layer classes.	
iv.	Give the significance of processors in system design.	
Q.3A	Briefly describe the various quality measures of software development life cycle.	05
Q.3B	Discuss the various activities used in system development approach.	05
Q.4A	Describe the various models used in Rumbaugh object-oriented methodology.	05
Q.4B	Explain the macro and micro development processes employed in Booch object-oriented methodology.	05
Q.5A	The Answering System is system for answering phone calls and recording messages from callers. It is intended as a personal answering system for a single owner. It will support: • Modes for announce only and accepting caller messages • Ability to review caller messages • Personalized greetings • Local management of modes, greetings, and caller messages Using the above information draw the use case diagram identifying the use cases and actors.	05
Q.5B	Librarians categorize the library books into loanable and non-loanable books. The non-loanable books are the reference books. However, the loanable books are the non-reference books. After cataloguing the books, the books are available for loan. Students who borrow the library books should return them back before the due date. Books that are 12 months over the due date would be considered as a lost state. However, if those books are found in the future, they must be returned back to the library. When the books are found not required in the library or have been damaged, the book would be disposed. Draw the state diagram using the above information for library system.	05

Q.6A	Explain the use case analysis process using 'use' and 'extend' associations.	05
Q.6B	Discuss the concept of classification. How do we use this in identifying the classes in object analysis?	05
OR		
Q.6B	Illustrate the significance of access layer in object-oriented design.	05
Q.7A	Define the term object-oriented user interface (OOUI). Give some examples to demonstrate the applications of OOUI.	05
Q.7B	Elaborate the various steps followed in providing the assurance for the quality of software.	05
OR		
Q.7B	Discuss the guidelines for developing the testing phase for system usability and user satisfaction.	05
Q.8A	Explain in detail the object-oriented axioms with their associated corollaries.	10
Q.9A	i. How do we make reuse plan? Discuss the types of software reuse.	05
	ii. Enlist and explain the benefits and problems associated with reuse plans.	05
Q.9B	i. Elaborate the various guidelines for managing the data storage.	05
	ii. Describe the various approaches used in handling of boundary condition associated with system design.	05
OR		
Q.9B	Illustrate in detail the common architectural style for system design.	10

