

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

MOODBIDRI - 574 225

Affiliated to VTU, Belgaum and Approved by A.I.C.T.E., New Delhi

COURSE BOOK

(ACD - 08, ACD - 09, ACD - 10, ACD - 12, ACD - 13)

Period of the Semester : From 01-08-2014 to 19-11-2014
(Odd / Even)

Semester : VII CSE

Subject with Code : 10CS71 Object Oriented Modeling & Design

TIME SLOT

Mon : 12.00 - 01.00 Tue : _____
Wed : 10.00 - 11.00 Thu : 11.00 - 12.00
Fri : 11.00 - 12.00 & 4.00 - 5.00 Sat : _____

Name of the Teacher : Mr. Manjunath Kotur, Sr. Associate Professor
Department : CSE & Head



Alva's Education Foundation, Moodbidri

Alva's Institute of Engineering and Technology

Shobhavana Campus, Mijar, Moodbidri-574225. Phone: 08258-262725

ACADEMIC CALENDAR 2014-15 (Odd Semester) BE, M. Tech & MBA

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
AUG					1	2	3
	4	5	6	7	8	9	10
	11	12	13	14	15	16	17
	18	19	20	21	22	23	24
	25	26	27	28	29	30	31
	Number of working Days -24						

Aug 1 : Commencement of ODD semester BE, MBA

Aug 11-16 : Departmental Technical Talk 1

Aug 15: Independence Day

Aug 25-30 :Departmental Technical Talk 2

Aug 29: Sri Varasiddhi Vinayaka Vrata

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
SEP	1	2	3	4	5	6	7
	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30					
	Number of working Days - 25						

Sep 1-6 :Departmental Technical Talk 3

Sep 10 : Display of Attendance (as on 10-09-2014)

Sep 11-13: Test -1 for BE, MBA

Sep 15-20 :Departmental Technical Talk 4

Sep 24: Mahalaya Amavasya

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
OCT			1	2	3	4	5
	6	7	8	9	10	11	12
	13	14	15	16	17	18	19
	20	21	22	23	24	25	26
	27	28	29	30	31		
	Number of working Days -22						

Oct 02 :Mahatma Gandhi Jayanthi

Oct 03 :Mahanavami -Ayudha Pooja

Oct 04 :Vijayadashami

Oct 06-11 :Departmental Technical Talk 5

Nov 11 : Display of Attendance (as on 11-10-2014)

Oct 13-15 : Test -2 for BE, MBA

Oct 22 : Naraka Chaturdashi

Oct 24 : Deepavali

Oct 27-31 :Departmental Technical Talk 6

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
NOV						1	2
	3	4	5	6	7	8	9
	10	11	12	13	14	15	16
	17	18	19	20	21	22	23
	24	25	26	27	28	29	30
	Number of working Days -14						

Nov 1: Kannada Rajyotsava

Nov 4: Moharam

Nov 11 : Display of Attendance (as on 11-11-2014)

Nov 12-14 : Test -3 for BE, MBA


Nov 19 : Last working day of ODD semester BE, MBA

Nov 21 :Commencement of Pract- Examinations for BE

Nov 22 : Last working day of III semester M. Tech

Total Number of working Days till 19th Nov: 85

AIET		INDIVIDUAL FACULTY TIME TABLE				Faculty Name: A. Manjunath Kotari			
Dept: Computer Science & Engineering						Academic Year: 2014-15 (ODD Semester)			
	1	2	T E A B R E A K	3	4	L U N C H	5	6	7
	9.00 – 9.55	9.55-10.50		11.10-12.05	12.05-1.00		2.00-3.00	3.00-4.00	4.00-5.00
Monday					OOMD		← M.Tech Seminar →		
Tuesday							← M.Tech Project Seminar →		
Wednesday		OOMD					← BE Project Seminar →		
Thursday				OOMD			← BE Seminar →		
Friday				OOMD					OOMD
Saturday		← III Sem M.Tech Project Seminar →							
Other Special Activities: HOD									
UNITS	Theory:10		Lab:00		Others:15		Total Units:25		


H.O.D.
 Dept. Of Computer Science & Engineering
 Alva's Institute of Engineering & Technology
 Near MOODBIDRI - 574 225


FACULTY
 Alva's Institute of Engg. & Technology
 Near MOODBIDRI - 574 225, D.K.

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY, MIJAR, MOODBIDRI

CLASS TIMETABLE

Format No. ACD006
Issue No. 01
Rev. No. 00

Department	Computer Science and Engg.	Semester	VII	Section	00
Academic Year	2014-15	Room No.			
Class Coordinator	Ms. Deeksha M				

Day ↓ Time →	Period →	1	2	T E A	3	4	L U N C H	5	6	7
		9.00 – 9.55	9.55 – 10.50		11.10 – 12.05	12.05 – 1.00		2.00 – 3.00	3.00 – 4.00	4.00 – 5.00
Monday		PW	SAN		ACA	OOMD		← Forum / Aptitude Test →		
Tuesday		ACA	← Networks Laboratory → (MR+VSS)					ECS	JAVA	ACA
Wednesday		JAVA	OOMD	B R E A K	ECS	PW		← Web Programming Lab → (AN+PSK+SS)		
Thursday		ECS	SAN		OOMD	JAVA		ACA	SAN	ECS
Friday		PW	ECS		OOMD	JAVA		SAN	PW	OOMD
Saturday		JAVA	ACA		SAN	PW		← Seminar /Project Work→		

Allocation of Subjects

Theory:

Subject Code	Title	Subject Initial	Faculty Name	Faculty Code
10CS71	Object-Oriented Modeling and Design	OOMD	Prof.A.Manjunath Kotari	AMK
10CS72	Embedded Computing Systems	ECS	Mr.Manjunath Raikar	MR
10CS73	Programming the Web	PW	Mrs. Arundhathi Nelli	AN
10CS74	Advanced Computer Architectures	ACA	Ms. Deeksha M	DM
10CS753	Java and J2EE	JAVA	Mr. Parikshith Nayak S K	PSK
10CS765	Storage Area Networks	SAN	Mr. Sushant M	SM

Practical:

Subject Code	Title	Faculty Name	Faculty Code
10CSL77	Networks Laboratory	Mr.Manjunath Raikar Mr. Vivek Sharma S	MR VSS
10CSL78	Web Programming Laboratory	Mrs. Arundhathi Nelli Mr. Parikshith Nayak S K Mr. Sayeesh	AN PSK SS

HOD
H.O.D.

Dept. Of Computer Science & Engineering
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225

PRINCIPAL
PRINCIPAL

Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225, D.H.

VII SEM CSE

Sl. No.	USN. No.	Name of the Student
1	4AL08CS022	Jithikrishna T
2	4AL10CS005	Anitha N
3	4AL10CS019	Gowda Bharat Mohan Kumar
4	4AL10CS022	Johny Longjam
5	4AL10CS031	Prathiksha Shetty
6	4AL10CS0401	Arun
7	4AL11CS001	Abdul Irfan
8	4AL11CS002	Abhishek M K
9	4AL11CS005	Akshitha
10	4AL11CS007	Amin Namrata Manohar
11	4AL11CS008	Arjun Sreedharan
12	4AL11CS009	Arpitha Martin
13	4AL11CS010	Ashitha P.R
14	4AL11CS011	Ashwitha
15	4AL11CS012	Aswin.R.Ashok .
16	4AL11CS013	Basavadarshan.G N
17	4AL11CS014	Bhaktha Karthik Vivekanand
18	4AL11CS015	Chaithanya Ramesh
19	4AL11CS016	Dheeraj Karkera R
20	4AL11CS017	Jenifer Irol Saldanha .
21	4AL11CS018	Jyothsna.K
22	4AL11CS022	Nayana
23	4AL11CS023	Phanjoubam Purnima Devi
24	4AL11CS024	Pooja Hoblidar K
25	4AL11CS025	Pramod
26	4AL11CS026	Priyanka Lavita Crasto
27	4AL11CS027	Rajashree Rai
28	4AL11CS028	Rashmi
29	4AL11CS029	Reshma Shet
30	4AL11CS031	Sahana Y
31	4AL11CS032	Samuel K Johny
32	4AL11CS033	Sanchal Sano
33	4AL11CS034	Saritha
34	4AL11CS035	Shetty Tarunya Ganesh
35	4AL11CS036	Shriya S Hegde
36	4AL11CS037	Shwetha

37	4AL11CS038	Smitha
38	4AL11CS039	Sneha S
39	4AL11CS040	Soumya K.G
40	4AL11CS041	Suhasini Gaonkar
41	4AL11CS042	Sushmitha
42	4AL11CS043	Sweta Tarkeswar Jha
43	4AL11CS044	Vasudev Menon G
44	4AL11CS046	Vysakh.C
45	4AL11CS047	Yojan Kumari
46	4AL12CS400	Akshay
47	4AL12CS401	Jayanth K Gond
48	4AL12CS402	Khushbu Ben
49	4AL12CS404	Manjunatha M
50	4AL12CS405	Ajith Kumar Shetty

Ajith
 Dept. Of Computer Science & Engineering
 Alva's Institute of Engg. & Technology
 Nijampur, SIDRI - 574 225

Subject Code: 10CS71
Hours/Week : 04
Total Hours : 52

I.A. Marks : 25
Exam Hours: 03
Exam Marks: 100

PART – A

UNIT – 1

7 Hours

Introduction, Modeling Concepts, class Modeling: What is Object Orientation? What is OO development? OO themes; Evidence for usefulness of OO development; OO modeling history
Modeling as Design Technique: Modeling; abstraction; The three models.
Class Modeling: Object and class concepts; Link and associations concepts; Generalization and inheritance; A sample class model; Navigation of class models; Practical tips.

UNIT – 2

6 Hours

Advanced Class Modeling, State Modeling: Advanced object and class concepts; Association ends; N-ary associations; Aggregation; Abstract classes; Multiple inheritance; Metadata; Reification; Constraints; Derived data; Packages; Practical tips.
State Modeling: Events, States, Transitions and Conditions; State diagrams; State diagram behavior; Practical tips.

UNIT – 3

6 Hours

Advanced State Modeling, Interaction Modeling: Advanced State Modeling: Nested state diagrams; Nested states; Signal generalization; Concurrency; A sample state model; Relation of class and state models; Practical tips.
Interaction Modeling: Use case models; Sequence models; Activity models.
 Use case relationships; Procedural sequence models; Special constructs for activity models.

UNIT – 4

7 Hours

Process Overview, System Conception, Domain Analysis: Process Overview: Development stages; Development life cycle.
System Conception: Devising a system concept; Elaborating a concept; Preparing a problem statement.
Domain Analysis: Overview of analysis; Domain class model; Domain state model; Domain interaction model; Iterating the analysis.

PART – B

UNIT – 5

7 Hours

Application Analysis, System Design: Application Analysis: Application interaction model; Application class model; Application state model; Adding operations.
 Overview of system design; Estimating performance; Making a reuse plan; Breaking a system in to sub-systems; Identifying concurrency; Allocation of sub-systems; Management of data storage; Handling global resources; Choosing a software control strategy; Handling boundary conditions; Setting the trade-off priorities; Common architectural styles; Architecture of the ATM system as the example.

UNIT – 6

7 Hours

Class Design, Implementation Modeling, Legacy Systems: Class Design: Overview of class design; Bridging the gap; Realizing use cases; Designing algorithms; Recursing downwards, Refactoring; Design optimization; Reification of behavior; Adjustment of inheritance; Organizing a class design; ATM example.
Implementation Modeling: Overview of implementation; Fine-tuning classes; Fine-tuning generalizations; Realizing associations; Testing.
Legacy Systems: Reverse engineering; Building the class models; Building the interaction model; Building the state model; Reverse engineering tips; Wrapping; Maintenance.

UNIT – 7

6 Hours

Design Patterns – 1: What is a pattern and what makes a pattern? Pattern categories; Relationships between patterns; Pattern description
Communication Patterns: Forwarder-Receiver; Client-Dispatcher-Server; Publisher-Subscriber.

UNIT – 8

6 Hours

Design Patterns – 2, Idioms: Management Patterns: Command processor; View handler.
Idioms: Introduction; what can idioms provide? Idioms and style; Where to find idioms; Counted Pointer example

Text Books:

1. Michael Blaha, James Rumbaugh: Object-Oriented Modeling and Design with UML, 2nd Edition, Pearson Education, 2005. (Chapters 1 to 17, 23)
2. Frank Buschmann, Regine Meunier, Hans Rohnert, Peter Sommerlad, Michael Stal: Pattern-Oriented Software Architecture, A System of Patterns, Volume 1, John Wiley and Sons, 2006. (Chapters 1, 3.5, 3.6, 4)

Reference Books:

1. Grady Booch et al: Object-Oriented Analysis and Design with Applications, 3rd Edition, Pearson, 2007.
2. Brahma Dathan, Sarnath Ramnath: Object-Oriented Analysis, Design, and Implementation, Universities Press, 2009.
3. Hans-Erik Eriksson, Magnus Penker, Brian Lyons, David Fado: UML 2 Toolkit, Wiley- Dreamtech India, 2004.
4. Simon Bennett, Steve McRobb and Ray Farmer: Object-Oriented Systems Analysis and Design Using UML, 2nd Edition, Tata McGraw-Hill, 2002.

USN

--	--	--	--	--	--	--	--	--	--

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY, MOODBIDRI

(A unit of Alva's Education Foundation)

Seventh Semester B.E. (CSE)

I. A Test Examinations-I

11th September - 2014

10CS71 – OBJECT ORIENTED MODELING & DESIGN

Duration: 1 Hour

Max. Marks: 25

*Note: 1) Answer any **Two full** questions.*

- | | | |
|----|---|-----|
| 1. | a) Define the themes of the Object Orientation | 2 ½ |
| | b) Explain the class diagrams with proper notation and 2 examples | 5 |
| | c) List and explain different OCL constructs for traversing class models | 5 |
| 2. | a) Differentiate aggregation and composition | 2 ½ |
| | b) Explain Generalization and Inheritance | 5 |
| | c) Prepare a class diagram for a graphical document editor that supports grouping. Assume that a document consist of several sheets each sheet contains drawing objects, including text, geometrical objects and groups. A group is simply a set of drawing objects possibly including other groups. A group must contain at least two drawing objects. Drawing objects can be direct member of at most one group. Geometrical objects include circles, ellipses, rectangles, line and squares. | 5 |
| 3. | a) What is qualified association? Explain | 2 ½ |
| | b) Explain Meta Data and Derived Data | 5 |
| | c) Construct a state diagram for phone line with activities | 5 |

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY, MOODBIDRI

(A unit of Alva's Education Foundation)

Seventh Semester B.E. (CSE)

I. A Test Examinations-I

SCEHEME OF EVALUATION

11th September - 2014

10CS71 – OBJECT ORIENTED MODELING & DESIGN

Note: 1) Answer any Two full questions.

1.	a)	OO Themes <ul style="list-style-type: none"> • Abstraction • Encapsulation • Combining Data and Behavior • Sharing • Emphasis on the essence of an object • Synergy 	2 ½
	b)	<ul style="list-style-type: none"> • Class diagrams provide a graphic notation for modeling classes and their relationships, thereby describing possible objects. • Class diagrams are useful both for abstract modeling and for designing actual programs. • Class diagrams are concise, easy to understand, and work well in practice. <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">ClassName</p> <hr/> <p>attributeName1 : dataType1 = default value1 AttributeName2 : dataType2 = default value2</p> <p style="text-align: center;">...</p> <hr/> <p>operationName1 (argumentList1): resultType1 operationName1 (argumentList1): resultType1</p> <p style="text-align: center;">...</p> </div> <p>Example : 1 Company 2. Person</p>	<div style="text-align: right;">1</div> <div style="text-align: right;">2</div> <div style="text-align: right;">2</div>
	c)	Different OCL (Object Constraint Language) with examples	5
2.	a)	Aggregation <ul style="list-style-type: none"> • It is a strong form of association in which an aggregate object is made of constituent parts. • The aggregate is semantically an extended object that is treated as a unit in many operations. • Aggregation is defined as relating one assembly to one constituent part class. An assembly with many kinds of constituent parts corresponds to many aggregations. Composition <ul style="list-style-type: none"> • It is the form of aggregation with two additional constraint: <ul style="list-style-type: none"> • Constituent parts can belong to at most one assembly. • Once a constituent part has been assigned an assembly, it has a coincident life time with the assembly. • Thus composition implies ownership of parts by the whole. • Deletion of an assembly object triggers deletion of all constituent objects via composition. 	2 ½

b) **Generalization and Inheritance**

- Generalization is the relationship between a class (the super class) and one or more variations of class (the sub classes).
- Generalization organizes classes by their similarities and differences, structuring the description of objects. The super class holds common attributes, operations and associations. Each sub class is said to inherit the features of its super class.
- Generalization is called the "is-a" relationship, because each instance of a sub class is an instance of super class.
- Simple Generalization organizes classes into a hierarchy; (single sub class has a single immediate super class).

UML notation for Generalization

- A large hollow arrow head points to the super class. Super class is on top, and sub classes on bottom. Curly bracket denotes UML Comment.
- Instance of a subclass is simultaneously an instance of all its ancestor classes.

Uses of Generalization

- Support for polymorphism.
- To structure the description of objects.
- To enable re use of code.

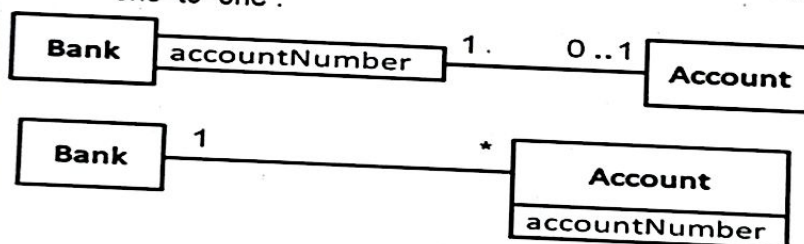
Explanation- 3 Marks +

Diagram- 2 Marks

c) **Class Diagram – 5 Marks**

3. a)

- A **qualified association** is an association in which an attribute called the qualifier disambiguates the objects for a "many" association end. It is possible to define qualifiers for "one to many" and "many to many" associations.
- Qualifier selects among the target objects, reducing effective multiplicity, from "many" to "one".
- Qualified associations with a target multiplicity of "one" or "zero-or-one" specify a precise path for finding the target object from the source object.
- Example: Bank services multiple accounts. An account belongs to a single bank. Within a bank, the account number specifies a unique account. **Bank** and **Account** are classes. And **accountNumber** is a qualifier. This qualification reduces the effective multiplicity of this association from "one-to-many" to "one-to-one".

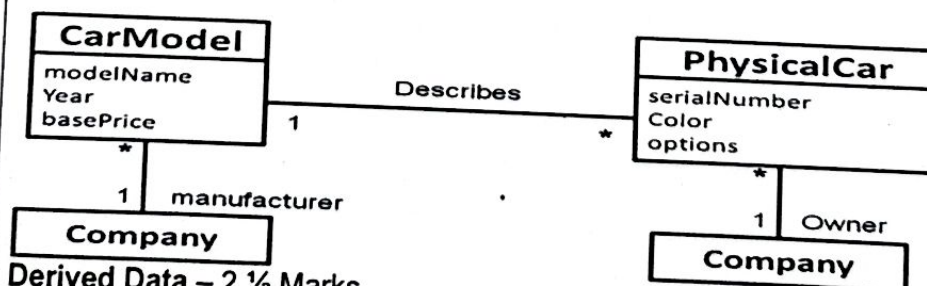


1 ½

1

b) **Metadata**

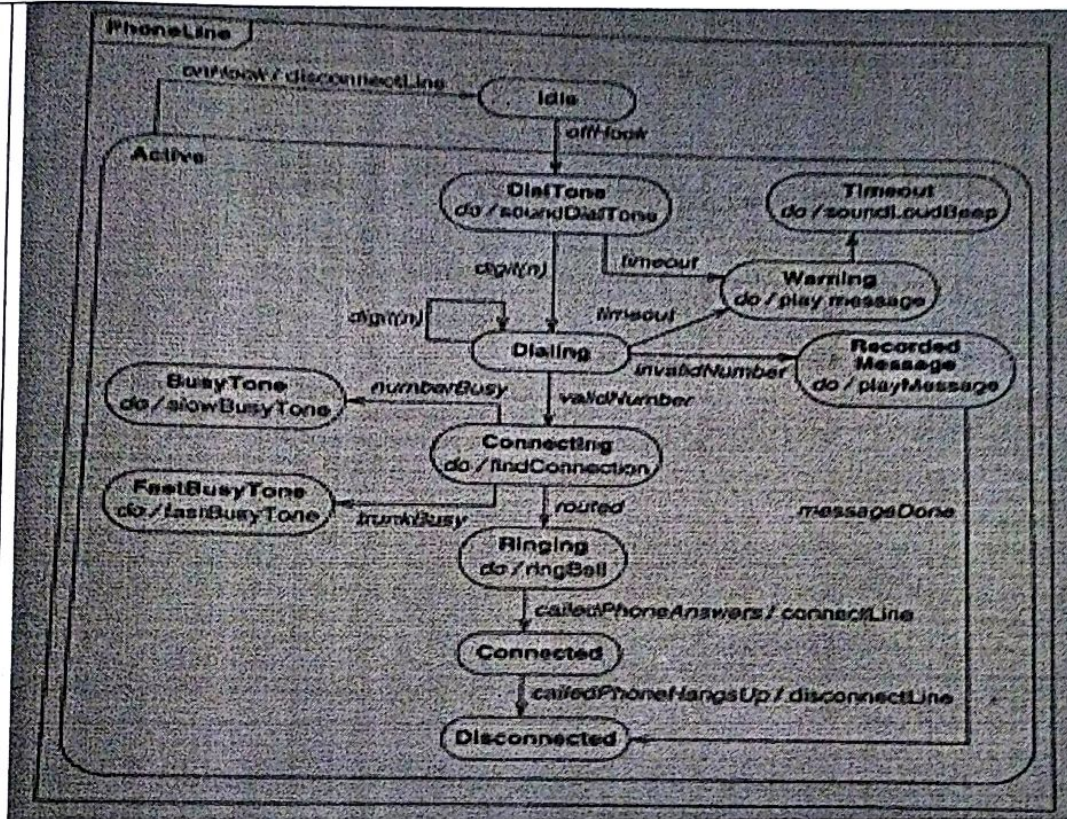
- Metadata is data that describes other data.
- Meta Classes: Classes are also considered as objects, but classes are meta objects. Class descriptor objects have features, and they have their own classes called as metaclasses.



Derived Data – 2 ½ Marks

2 ½

c)



5 Marks


Name & Signature of Staff


Signature of HOD

USN

--	--	--	--	--	--	--	--	--	--

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY, MOODBIDRI

(A unit of Alva's Education Foundation)

Seventh Semester B.E. (CSE)

I. A Test Examinations-II

21st ^{Oct} September - 2014

10CS71 – OBJECT ORIENTED MODELING & DESIGN

Duration: 1 Hour

Note: 1) Answer any Two full questions.

Max. Marks: 25

1.
 - a) List out the guidelines to construct use case models
 - b) How many types of sequence models are there in interaction modeling? Explain sequence models with examples. 2 ½
 - c) Explain the types of use case relationships with example 5
2.
 - a) Define Sequence Diagrams with Passive Objects
 - b) Construct a activity diagram for the following 2 ½
 - i. For processing of Stock trade order that has been received by an online stock broker
 - ii. For a workstation that is turned on
 - c) What are the different questions need to answer while elaborating a system concept? Explain with ATM case study. 5
3.
 - a) What is Analysis? Explain the overview of analysis 2 ½
 - b) How to keep the right classes in domain class model? Explain 10

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY, MOODBIDRI

(A unit of Alva's Education Foundation)

Seventh Semester B.E. (CSE)

I. A Test Examinations-II

SCEHEME OF EVALUATION

21st October - 2014

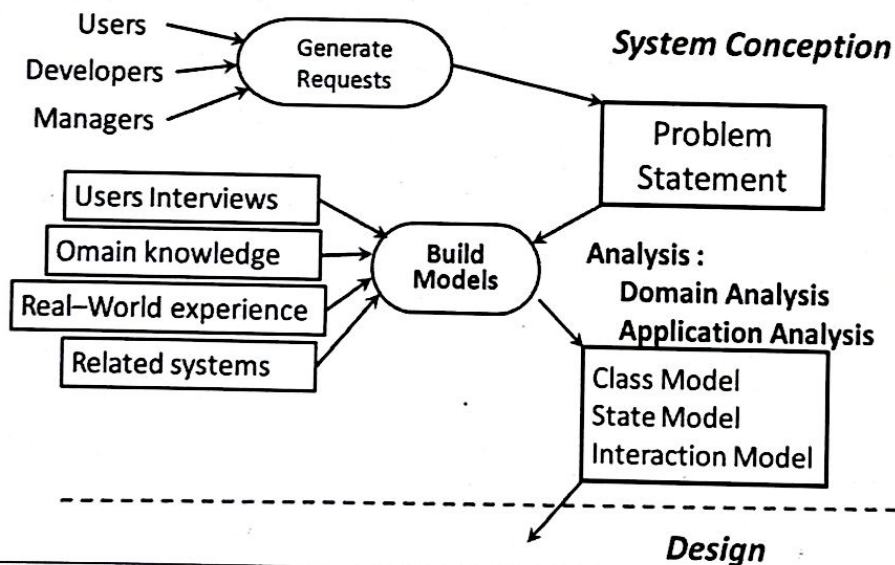
10CS71 – OBJECT ORIENTED MODELING & DESIGN

Note: 1) Answer any **Two** full questions.

1.	a)	<ul style="list-style-type: none">• Don't misuse activity diagrams• Level diagrams• Be careful with branches and conditions• Be careful with concurrent activities• Consider executable activity diagram	2 !		
	b)	<p>Two Types of Sequence Models are there in interaction modeling</p> <p>Scenarios</p> <ul style="list-style-type: none">• It is a sequence of events that occurs during one particular execution of a system.• It can be historical record of executing an actual system.• Scenario can be displayed as a list of text statements. <p>Sequence Diagrams</p> <ul style="list-style-type: none">• Interaction Diagrams are the diagrams that describe how groups of objects collaborate to get the job done.• Interaction Diagram capture the behavior of a single use case, showing the pattern of interaction among objects.• The diagram shows number of example objects and messages passed between those objects within the use case.• It shows the participants in an interaction and the sequence of messages among them.• It also shows the interaction of the system with its actors.• Describes the behavior of the system by viewing the interaction between the system and its environment.• A sequence diagram shows an interaction arranged in a time sequence.	2 3 w exam		
	c)	<p>Usecase relationships</p> <ul style="list-style-type: none">• Inclusion• Extended• Generalization	5		
2.	a)	<p>Sequence Diagrams with passive objects</p> <p>Diagram- 1 ½ Marks + Explanation – 1 Mark</p>	2 !		
	b)	<p>Sequence diagram i) For processing of stock trade order that has been received by an online stock broker - 2 ½ Marks</p> <p>ii) For a workstation that is turned on – 2 ½ Marks</p>	5		
	c)	<table><tr><td>Who is the application for?</td><td>We should clearly understand which persons and organizations are stakeholders of the new system. Two of the most important stakeholders are financial sponsors and the end users.</td></tr></table>	Who is the application for?	We should clearly understand which persons and organizations are stakeholders of the new system. Two of the most important stakeholders are financial sponsors and the end users.	5
Who is the application for?	We should clearly understand which persons and organizations are stakeholders of the new system. Two of the most important stakeholders are financial sponsors and the end users.				

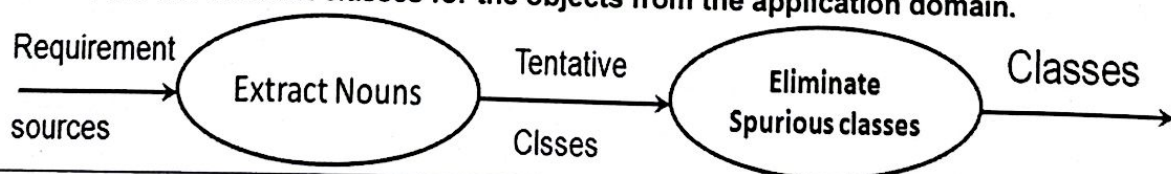
What problems will it solve?	We must clearly bound the size of effort and establish its scope. We should determine which features will be in the new system and which will not.
Where will it be used?	We should have a general idea of where the new system might be used. We should have a rough idea about how the new system will complement the existing systems.
When is it needed?	Two aspects of time are important: Feasible time (the time in which the system can be developed within the constraints of cost and available resources) and Required time (When the system is needed to meet business goals)
Why is it needed?	We may need to prepare a business case for new system if some one has not already done so. The business case contains financial justification for the new system including the cost, tangible benefits, risk and alternatives. We must clearly understand the motivations for the new system.
How will it work?	We should consider the merits of different architectures. This will improve the confidence that the problem can be solved reasonably.

3. a)
- Analysis begins with a problem statement generated during system conception.
 - Analysis model addresses three aspects of objects: static structure of objects (Class Model), Interaction among models (Interaction model), and life cycle histories of objects (State Model).



b) **Finding Classes**

- Find the relevant classes for the objects from the application domain.

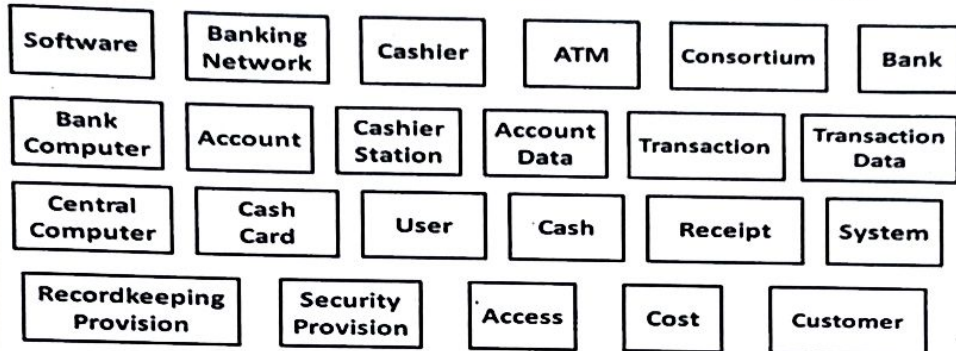


- Example 1: In the statement "A reservation system to sell tickets to performances at various theaters". The tentative classes would be "Reservation", "System", "Ticket", "Performance", "Theater" etc...
- Example 2: Tentative classes for building cataloging and checkout system for Library are :
Books, Magazines, newspapers, records, videos, and so on.

10

The Tentative Classes in an ATM Example

ATM Classes extracted from problem statement nouns



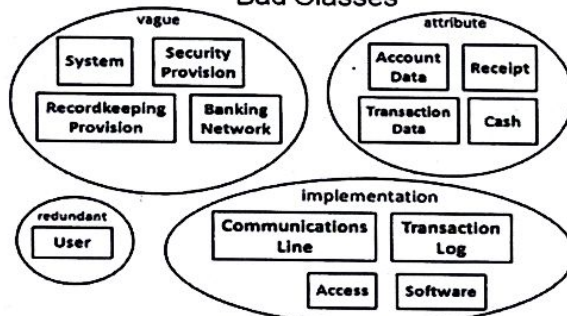
ATM classes identified from knowledge of problem domain

These classes do not appear directly in the statement but can be identified from the knowledge of problem domain.

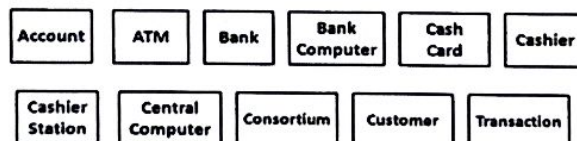


Eliminating unnecessary classes from ATM Problem.

Bad Classes



Good Classes



- Redundant classes: If two classes express the same concept, we should keep the most descriptive name.
- In ATM Example: Customer and user are redundant; we retain customer because it is more descriptive.

Amal 22/10

USN

--	--	--	--	--	--	--	--	--	--

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY, MOODBIDRI

(A unit of Alva's Education Foundation)

Seventh Semester B.E. (CSE)

I. A Test Examinations-III

11th November - 2014

10CS71 – OBJECT ORIENTED MODELING & DESIGN

Duration: 1 Hour

Max. Marks: 25

*Note: 1) Answer any **Two full** questions.*

- | | | | |
|----|----|--|-----|
| 1. | a) | Draw the initial class diagram for ATM systems | 2 ½ |
| | b) | Discuss the steps involved in domain state model | 5 |
| | c) | List the steps involved in construction of application interaction model explain any one | 5 |
| 2. | a) | Write a activity diagram for card verification | 2 ½ |
| | b) | Explain the steps involved application class model | 5 |
| | c) | Discuss the steps involved in application state model | 5 |
| 3. | a) | What are libraries? Explain the good qualities of libraries | 2 ½ |
| | b) | How do you allocate subsystems in system design? Explain | 5 |
| | c) | Explain three types of software control strategy | 5 |

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY, MOODBIDRI

(A unit of Alva's Education Foundation)

Seventh Semester B.E. (CSE)

I. A Test Examinations-III

SCEHEME OF EVALUATION

11th October - 2014

10CS71 – OBJECT ORIENTED MODELING & DESIGN

Note: 1) Answer any Two full questions.

1.	a)	<pre> classDiagram Consortium "1" -- "0..1" Bank : bankCo Consortium "1" -- "1" CentralCompute CentralCompute "1" -- "*" BankCompute : Communicates With Bank "1" -- "*" Account Bank "1" -- "*" Cashier : Employs Bank "1" -- "*" BankCompute BankCompute "1" -- "*" CashierStation : Communicates With Cashier "1" -- "*" CashierTransaction : EnteredBy CashierStation "1" -- "*" CashierTransaction : EnteredOn ATM "*" -- "1" RemoteTransaction : EnteredOn RemoteTransaction "*" -- "1" CashCard : AuthorizedB Cashier "*" -- "*" CashCard Customer "1" -- "*" Account </pre>	2 ½
	b)	<p>Steps involved in domain state model</p> <ul style="list-style-type: none"> • Identify domain classes with states • Find states • Find events • Build state diagrams • Evaluate state diagrams 	5
	c)	<ul style="list-style-type: none"> • Determine the system boundary. • Find Actors. • Find Use Cases. • Find Initial and Final Events. • Prepare normal scenarios. • Add variation and exception scenarios. • Find external events. • Prepare activity diagrams for complex use cases. • Organize Actors and Use cases • Check against the domain class model. 	5
2.	a)	Activity Diagram for Card Verification – 2 ½ Marks	2 ½
	b)	<ul style="list-style-type: none"> • Specify user interfaces • Define boundary classes. • Determine controllers. 	5

		<ul style="list-style-type: none"> • Check against the interaction model 	
	c)	<ul style="list-style-type: none"> • Various steps included are: <ul style="list-style-type: none"> • Determine application classes with states • Find events • Build State diagrams • Check against other state diagrams • Check against the class model • Check against the interaction model. 	5
3.	a)	<ul style="list-style-type: none"> • A Library is a collection classes that are useful in many contexts. • Collection of classes must be carefully organized, so that users can find them. • Qualities of good class libraries: <ul style="list-style-type: none"> - Coherence: A class library should be organized about a few, a well focused themes. - Completeness: A class library should provide complete behavior for the chosen themes. - Consistency: Polymorphic operations should have consistent names and signatures across classes. - Efficiency: A library should provide alternative implementations of algorithms that trade time and space. - Extensibility: The user should be able to define subclasses for library classes. - Genericity: A Library should use parameterized class definitions where appropriate. 	2 ½
	b)	Different subsystems in subsystems design	5
	c)	<ul style="list-style-type: none"> • Procedure driven control- 2 Marks • Event driven control—2 Marks • Concurrent control —1 Marks 	5

1
[Signature]
 11/11/14

USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



06CS71

Seventh Semester B.E. Degree Examination, May/June 2010
Object Oriented Modeling and Design

Time: 3 hrs.

Max. Marks:100

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

PART - A

- 1
 - a. Explain briefly three models used to describe a system. (06 Marks)
 - b. Explain with a diagram, how an association class participates in another association. (04 Marks)
 - c. With a neat diagram, explain a class model of a work-station window management system. (10 Marks)
- 2
 - a. What is an association end? What are the properties of an association end? (06 Marks)
 - b. Define reification. Explain it with a diagram. (06 Marks)
 - c. Explain with a diagram, the basic UML syntax for state diagrams. (08 Marks)
- 3
 - a. Explain with a diagram, nested states for a phone line. (06 Marks)
 - b. What is a usecase? Explain the guidelines for usecase models. (08 Marks)
 - c. What do you mean by a swimlane? Explain briefly an activity diagram with swimlanes for servicing an airplane. (06 Marks)
- 4
 - a. Explain the sequence of software development stages. (08 Marks)
 - b. What do you mean by system conception? Explain devising a system concept. (08 Marks)
 - c. List the steps to construct a domain state model. (04 Marks)

PART - B

- 5
 - a. With a neat sequence diagram, explain process transaction scenario. (08 Marks)
 - b. What are the different aspects of reusability? Explain the reusable things. (08 Marks)
 - c. What are the steps in designing a pipeline for a continuous transformation? (04 Marks)
- 6
 - a. Explain the consideration for choosing alternative algorithms. (06 Marks)
 - b. When fine-tuning of classes is essential? How is it achieved? (08 Marks)
 - c. Compare forward engineering and reverse engineering. (06 Marks)
- 7
 - a. Explain briefly the properties of patterns for software architecture. (08 Marks)
 - b. Explain pattern categories. (06 Marks)
 - c. What is a forwarder-receiver design pattern? When is it useful? (06 Marks)
- 8
 - a. Explain the liabilities imposed by a command processor pattern. (06 Marks)
 - b. Why view handler design pattern is used? Explain the scenario of the view handler creating a new view. (08 Marks)
 - c. Write the steps to implement the counted pointer idiom. (06 Marks)

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.

USN

--	--	--	--	--	--	--	--	--	--



06CS71

Seventh Semester B.E. Degree Examination, Dec.09/Jan.10
Object Oriented Modeling and Design

Time: 3 hrs.

Max. Marks:100

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

PART - A

- 1 a. Explain the models in OO development. Bring out the relationship among the models. (08 Marks)
- b. With the help of a sample class model, explain the following : (12 Marks)
 - i) attributes and operations
 - ii) qualified associations
 - iii) multiplicity
 - iv) association end names
 - v) generalization and inheritance.
- 2 a. Explain the properties of association ends. (08 Marks)
- b. Define an event in state modeling. Explain the kinds of events. (07 Marks)
- c. Give the general UML system for state diagram and explain. (05 Marks)
- 3 a. What is an activity diagram? Explain the special constructs for activity models. (10 Marks)
- b. What are use case models? Give the guidelines for constructing a use case model. (05 Marks)
- c. What are nested states? Explain with examples. (05 Marks)
- 4 a. Explain the stages in the software development process. Which life cycle would you prefer in the development? Why? (10 Marks)
- b. Identify the classes of an ATM for a bank. What criteria would you take into consideration to select the right classes? Explain. (10 Marks)

PART - B

- 5 a. What are the steps involved in constructing an application state model. (12 Marks)
- b. Explain any two architectural styles, suited for system design. (08 Marks)
- 6 a. How would you improve the organization of a class design? (06 Marks)
- b. How would you choose association traversal? Explain the following : (06 Marks)
 - i) One-way association
 - ii) Two-way association.
- c. Write short notes on : (08 Marks)
 - i) Reverse engineering
 - ii) Wrapping.
- 7 a. What is a pattern? Explain the model-view-controller design pattern for software architecture, with OMT diagram. (05 Marks)
- b. List and explain different pattern categories. Give the differences between patterns and methods. (05 Marks)
- c. Explain client-dispatcher-server design pattern. (10 Marks)
- 8 a. Explain the command processor design pattern. (10 Marks)
- b. Explain publisher-subscriber design pattern. (05 Marks)
- c. What are idioms and styles? Explain with the help of an example, a style guide idiom. (05 Marks)

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

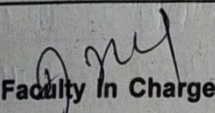
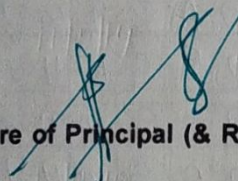
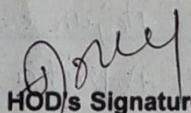
AIET		Lesson Plan & Execution		Format No.	ACD 08		
				Issue No.	01		
				Rev. No.	00		
Name of the faculty		Mr. Manjunath Kotadi					
Semester and Section		VII					
Date of Commencement		01-08-2014					
Last Working Day of the Semester		19-11-2014					
Source Materials List							
1. Object Oriented modelling & Design		- Michael Blaha, 2nd Edition, Pearson Education					
2. Pattern Oriented Software		Frank Buschmann, Volume I					
3. Architecture		John Wiley 2007.					
4. Object Oriented Analysis & Design		Gandy Rorch et al.					
5. with application		3rd Edition Pearson Education					
Subject Name		OOMD					
Period	Plan			Execution			
	Date	Topics to be covered	Source Material needed	Topics Covered	Date	Source Material Referred	
1	01/08/14	Introduction about object orientation.	1	Introduction about object orientation	13/8	1	
2	05/08/14	OO themes, OO modeling history	1	OO themes, OO modeling history	14/8	1	
3	07/08/14	Modeling as Design Technique	1	Modeling as Design Technique	18/8	1	
4	08/08/14	Three models.	1	Three models	20/8	1	

Period	Plan			Execution		
	Date	Topics to be covered	Source Material needed	Topics Covered	Date	Source Material Referred
5	11/8/14	Class modeling & class concepts	1	class modeling & class concepts	21/8	21/8
6	13/8/14	Link Associations, concepts	1	Link Association concepts	22/8	22/8
7	14/8/14	Generalization & inheritance	1	Generalization & inheritance	24/8	22/8
8	18/8/14	A sample class model	1	A sample class model	24/8	25/8
9	19/8/14	Advanced Class modeling	1	Advanced class modeling	24/8	24/8
10	21/8/14	Association Ends w/ Any association	1	Association Ends w/ Any association	24/8	24/8
11	22/8/14	Aggregation, multiplicity	1	Aggregation, multiplicity	24/8	24/8
12	25/8/14	Refinement, Constraints, derived class, Packages	1	Refinement, constraints, Derived class, Packages	30/8	30/8
13	27/8/14	State modeling - events, states, transitions	1	State modeling - events, states, Transitions	31/8	31/8
14	1/9/14	Advanced state modeling, Nested state diagram	1	Advanced state modeling, Nested state diagram	31/8	31/8
15	3/9/14	Nested states, Generalization, Concurrency	1, 3	Nested states, Generalization concepts	4/9	4/9
16	4/9/14	A sample state model	1	A sample state model	5/9	5/9
17	5/9/14	Relation of class & state model	1	Relation of class state model	5/9	5/9

Period	Plan			Execution		
	Date	Topics to be covered	Source Material needed	Topics Covered	Date	Source Material Referred
18	8/9/14	Future modeling - use case models	1	Future modeling	10/9	1
19	10/9/14	Sequence models - Activity models	1	Sequence models - Activity models	15/9	1
20	15/9/14	Use case relationships - Processual & gen. models	1	Use case relationships - processual	17/9	1
21	16/9/14	Process overview - System conception	1	Process overview - system concept	19/9	1
22	18/9/14	Developing a system concept	1	Developing a system concept	22/9	1
23	19/9/14	Elaborating a concept	1, 3	Elaborating a concept	25/9	1
24	22/9/14	Preparing a problem statement	1, 3	Preparing a problem statement	26/9	1
25	25/9/14	Domain Analysis	1, 3	Domain Analysis	29/9	1
26	26/9/14	Domain class model	1	Domain class model	29/9	1
27	29/9/14	Domain state model & Interaction model	1	Domain state model & Interaction model	1/10	1
28	1/10/14	Application Analysis & Application interaction model	1	Application Analysis	9/10	1
29	6/10/14	Application class model	1	Application interaction model	10/10	1
30	8/10/14	Application state model	1	Application class model	16/10	1

Period	Plan			Execution		
	Date	Topics to be covered	Source Material needed	Topics Covered	Date	Source Material Referred
31	9/10/14	Overview of system design	1	Appl ^y state model	18/10	1
32	10/10/14	Estimating performance	1.4	Overview of system design	20/10	1
33	16/10/14	Modeling a use case plan, breaking a system into sub-systems	1.4	Estimating performance	22/10	1.4
34	17/10/14	Identifying core use cases, Allocation of sub-systems	1.4	Modeling use case plan	23/10	1.4
35	20/10/14	Management of data storage	1.4	Identifying core use cases	29/10	1.4
36	21/10/14	Handling global resources, choosing a software control strategy	1.3	Management of data storage	30/10	1.4
37	23/10/14	Handling boundary conditions, setting the trade-offs	1	Handling global resources	31/10	1.3
38	27/10/14	Common architectural styles	1	Choosing software control strategy	3/11	1
39	28/10/14	Architecture of ARM system	1	Handling boundary conditions	5/11	1
40	29/10/14	Overview of class design, Bridging gap	1	Common architectural styles	6/11	1
41	31/10/14	Refining use cases, Designing algorithms	1	Architecture of ARM system	7/11	1
42	31/10/14	Refining use cases, Refactoring	1	Overview of class design	8/11	1
43	3/11/14	Design optimization, Refinement of behavior	1	Refining use cases	10/11	1

Period	Plan			Execution		
	Date	Topics to be covered	Source Material needed	Topics Covered	Date	Source Material Referred
44	4/11/14	Implement modeling	1	Design patterns Ref: & Behv	11/11	1
45	5/11/14	Fire-tuning classes Fire-tuning generalities	1,3	Implement modeling	19/11	1
46	6/11/14	Reliving associativity Testing	1,3	Fire tuning class/gent	17/11	1,3
47	7/11/14	Legacy system Reverse Engineering Building to class model	1,3	Reliving associativity Testing	18/11	1,3
48	10/11/14	Design Patterns - 1 Factory Categories	2	Legacy system Reverse Eng.	19/11	1,3
49	11/11/14	Component Patterns	2	Design Pattern - 1 Factory Category	19/11	2
50	17/11/14	Design Pattern - 2 Idioms	2	Component Patterns	19/11	2
51	18/11/14	Manager Pattern Common Process	2			
52	19/11/14	Idioms: Factory, Hybrid where to find idiom	2			
		Done 18/11				

Others	Planned	Actual	Remarks :
Special Classes	08	00	} since more planned activity for final year
Tutorials	04	00	
Assignments	03	02	
Seminars	—		
IA Tests	03	03	
Portions Covered in the entire Semester	90%		
Course Effectiveness			
Students Feedback	Good		
Students Response			
Result	No. of Students AP	No. of Students Passed	% of Result
	50	44	88%
<div style="display: flex; justify-content: space-between;"> <div> <p> Faculty In Charge</p> <p> Signature of Principal (& Remarks if any)</p> </div> <div> <p> HOD's Signature</p> </div> </div>			

ALVA'S INSTITUTE OF ENGINEERING

MIJAR,

ATTENDANCE CUM INTERNAL

AND TECHNOLOGY

MOODBIDRI - 574 225

Class : VII CSESubject : DEM

No. of Classes held : 50

Subject : 10CS74

Sl. No.	U.S.N.	Name	Date / Month															Average Marks
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	HAL10CS022	Johny Longjam	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
2	HAL10CS101	Arun	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
3	HAL10CS022	Jithikrishna T	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
4	HAL10CS005	Anitta N	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
5	HAL10CS019	Epata Bhoot Mohan Kumar	A	1	3	4	5	6	7	8	9	10	11	12	13	14	15	
6	HAL10CS021	Prathiksha Shetty	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
7	HAL11CS001	Abdul Inqan	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
8	CS002	Akshik M.K	1	2	3	4	5	6	7	8	9	A	A	A	10	11	(A)	
9	CS005	Akshitha	1	2	3	4	5	6	7	8	9	10	11	12	13	14	(A)	
10	CS007	Amin Namikam	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
11	CS008	Ajith sreedharan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	(A)	
12	CS009	Apitha Martin	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
13	CS010	Ashitha P.R	1	2	3	4	5	6	7	8	9	10	11	A	12	13	(A)	
14	CS011	Ashwitha	1	2	3	4	5	6	7	8	9	10	11	12	13	14	(A)	
15	CS012	Aroin R. Arick	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
16	CS013	Bhagavadeesha G.N	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
17	CS014	Bhaletha Kuthik V.	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
18	CS015	Chaitanya Reddy	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
19	CS016	Dharmaj Karkera R.	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
20	CS017	Jenifer Isid J	1	2	3	4	5	6	7	8	9	10	11	12	13	14	(A)	
21	CS018	Jyothsna K.	1	2	3	4	5	6	7	8	9	10	11	A	12	13	(A)	
22	CS022	Mayana	A	1	2	3	4	5	6	7	8	9	10	11	12	(A)	(A)	
23	CS023	Pranjanam Punzari	1	2	3	4	5	6	7	8	9	10	11	12	13	14	(A)	
24	CS024	Peetja Anubidul K.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	(A)	
25	CS025	Poornod	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14	
26	CS026	Prinyanka Laita C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
27	CS027	Rajashree Rai	1	2	3	4	5	6	7	8	9	10	11	A	12	13	(A)	
28	CS028	Rashmi	1	2	3	4	5	6	7	8	9	10	11	A	12	13	(A)	
29	CS029	Reshma Slet	1	2	3	4	5	6	7	8	9	10	11	A	12	13	(A)	
30	CS031	Sahana Y.	1	2	3	4	5	6	7	8	9	10	11	A	12	13	(A)	
Staff Initials			A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	

Students attendance		No. of Class Attended	% of Attendance	Internal Assessment (25)			Average Marks
Conducted				I	II	III	
48	60						
		50	100	11	12	AB	15
		47	94	06	10	17	15
		47	94	15	15	AB	15
		47	94	17	AB	19	18
		49	98	15	21	18	20
		49	98	19	18	AB	19
		48	96	14	20	12	17
		43	86	20	20	AB	20
		49	98	20	17	25	23
		48	96	20	18	AB	19
		44	88	18	AB	AB	09
		45	90	20	20	AB	20
		47	94	21	17	AB	19
		46	92	23	AB	24	24
		47	94	18	08	15	15
		42	85	13	16	AB	15
		45	90	13	17	AB	15
		47	94	16	16	AB	16
		47	94	21	13	AB	17
		47	94	22	20	25	24
		46	92	24	20	AB	22
		44	88	21	21	AB	21
		45	90	24	24	AB	24
		45	90	17	22	AB	20
		45	90	AB	17	17	17
		46	92	24	21	AB	23
		45	90	19	20	AB	20
		44	88	20	19	AB	20
		45	90	23	22	AB	23
		46	92	21	15	22	22
		A	A	A	A	A	A

any 10/5

any 10/5

AL

ALVA'S INSTITUTE OF ENGINEERING
AND TECHNOLOGY

MOODBIDRI - 574 225

Class : VII CSE
Subject : OOMD
No. of Classes held : 50

Subject :

		Date / Month	5/6	1/8
Sr. No.	U.S.N.	Name	1	2
1	44105022	Johny Longjam	1	2
2	44105024	Arun	1	2
3	44105025	Jithikrishna T	1	2
4	44105025	Anitta N	1	2
5	44105019	Epata Bhoot Mohan Kumar	A	1
6	44105031	Prathiksha Shetty	1	2
7	44105001	Abdul Jafar	1	2
8	CS002	Abhishek M.K	1	2
9	CS005	Akshitha	1	2
10	CS007	Amin Namyatam	1	2
11	CS008	Ajith sreedhasan	1	2
12	CS009	Arpitha Martin	1	2
13	CS010	Ashitha P.R	1	2
14	CS011	Ashwitha	1	2
15	CS012	Anwin R. Arthok	1	2
16	CS013	Bhagavadathan G.N	1	2
17	CS014	Bhaletha Kuttik V.	1	2
18	CS015	Chaitanya Ramesh	1	2
19	CS016	Dheeraj Kastnera R	1	2
20	CS017	Jenifer Isid O	1	2
21	CS018	Jyothisha K.	1	2
22	CS022	Mayana	A	1
23	CS023	Pranjanan Rana D	1	2
24	CS024	Pooja Hablidul K.	1	2
25	CS025	Poornima	1	2
26	CS026	Priyanka Laitu C	1	2
27	CS027	Rajashree Rai	1	2
28	CS028	Rashmi	1	2
29	CS029	Rishma Slet	1	2
30	CS031	Sahana Y.	1	2
Staff Initials				

29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60		
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47													
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50												
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49												
29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48												
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44												
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49												
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49												
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45												
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47													
25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44												
27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46												
29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47													
29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47													
29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47													
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47												
28	29	30	31	32	33	34																									

ATTENDANCE CUM INTERNAL

Class : VII CS/E

Subject : EOMD

No. of Classes held : 50

Subject : 10CS71

No. of Classes held : 50			Date / Month																														attendance		No. of Class		% of	Internal Assessment (25)			Average Marks																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Sl. No.	U.S.N.	Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	48	60	Attended	Attendance	I	II	III																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
1	C6032	Samuel K Johny	1	2	3	4	5	6	7	8	9	10	11	A	12	13	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	</

10/10
 10/10

10/10
 10/10

10/10
 10/10

[illegible]

AIET	INTERNAL EXAM RESULT ANALYSIS						Format No.	ACD 12
							Issue No.	31
							Rev. No.	00
Department	CSE						Semester	VII
							Subject Code	10CS71
Total No. of Students	50						Academic Year	2014-15
Test	Date	Number of Students				Signature		Remarks
		Attended	0-14	15-20	21-25	Faculty	HOD	
T ₁	9/9/14	48	07	33	08	Asst	Asst	—
T ₂	19/10/14	47	04	24	19	Asst	Asst	—
T ₃	11/11/14	21	00	10	10	Asst	Asst	—
T ₄								
T ₅								