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NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belgaum)

VII Sem B.E. (CSE) Mid Semester Examinations – I September 2012

CS703 – SOFTWARE ARCHITECTURE

Duration: 1 Hour | Max. Marks: 20

*Note: Answer any **One** full question from **each Unit.***

Unit – I

1. a) Explain activities involved in creating software architecture, using it to realize a design, and then implementing or managing the evolution of a target system or application. 3

   b) Diagrammatically explain architectural design used for ambler robot. 2

   c) Explain common Software Architecture structures. 5

2. a) Explain Reactive integration architectural style (AS). 3

   b) What makes architecture good? 2

   c) Explain four solutions to a system that accepts an ordered set of lines, each line is an ordered set of words, and each word is an ordered set of characters. Any line may be circularly shifted by repeatedly removing the first word and appending it at the end of the line. System finally outputs a listing of all circular shifts of all lines in alphabetical order. 5

Unit – II

3. a) Provide numerical values for mean times and calculate the availability. Briefly explain Availability general scenarios. 3

   b) A user, wanting to minimize the impact of an error, wishes to cancel a system operation at runtime; cancellation takes place in less than one second. Briefly explain general scenario and sample scenario steps for the respective quality attribute. 2

   c) Explain tactics for controlling deployment time and cost. 5

4. a) Explain Quality attribute parts. Differentiate architectural and non architectural aspects of usability, modifiability and performance. 3

   b) Explain Business qualities. 2

   c) Explain tactics to generate a response to an event arriving at the system within some time constraint. 5

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NMAM INSTITUTE OF TECHNOLOGY, NITTE

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VII Sem B.E. (CSE) Mid Semester Examinations – I, September 2013

CS703 – SOFTWARE ARCHITECTURE

Duration: 1 Hour | Max. Marks: 20

*Note: Answer any **One** full question from **each Unit.***

Unit – I

1. a) Software is being developed by ABC Infosystems which controls the movements of a Robot. The Robot has to locate valuable items on the seafloor like diamonds, gold, artifacts, etc and bring them up from the depths of the sea. Discuss which Architectural style is better for this situation and why? 6

   b) What is Architecture Business Cycle(ABC)? Explain with a neat Diagram. 4

2. a) A Software is being developed by XYZ Infosystems which controls the movements of a Submarine. The software should also send alerts to the concerned authorities in case of any disasters. Discuss which Architectural style is better for this situation and why. 6

   b) Mention the various Architectural Styles and briefly explain any One. 4

Unit – II

3. a) Which are the various Software Architecture Structures? Explain any One. 6

   b) With examples, explain the differences between Feedback control systems and Feedforward control systems. 4

4. a) Explain the Mobile Robotics Problem and discuss Layered Architecture Solution in detail. 6

   b) With a neat diagram, explain Quality Attribute Scenarios. 4

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NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belgaum)

VII Sem B.E. (CSE) Mid Semester Examinations – I, September 2014

CS703 – SOFTWARE ARCHITECTURE

1 Hour

Max. Marks: 20

*Note: Answer any **One** full question from **each Unit.***

Unit – I

Google has developed a new software which enables Cars to be driven without Drivers. List the stakeholders for the above software. Also discuss which Architectural Style will be better for this software and why? 10

A Scientist has developed a Robot which will be able to rescue persons/animals who have fallen into borewells. Assume you have been asked to develop the software for this Robot. Which Architectural Style will you use? Explain in detail. 10

Unit – II

Architectures affect the factors that influence them. Validate this statement. 10

Explain briefly about Event-Based, Implicit Invocation. Mention situations where it would be more relevant than other styles. 5

What is the Mobile Robotics Problem? Explain the Control Loop solution for the same. 5

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NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belagavi)

VII Sem B.E. (CSE) Mid Semester Examinations - I, September 2015

12CS703 - SOFTWARE ARCHITECTURE

Duration: 1 Hour | Max. Marks: 20

*Note: Answer any **One** full question from **each Unit.***

			Marks	BT*
		Unit – I		
1.	a)	What are the Process recommendations for making a Good Architecture? Explain.	5	L*2
	b)	Discuss implicit invocation solution for KWIC problem.	5	L2
2.	a)	Explain Mobile Robotics Case study and discuss layered architecture style for it.	5	L2
	b)	What are the different activities to be done to design a Efficient architecture.	5	L1
		Unit – II		
3.	a)	Explain modifiability and General scenarios for it.	5	L2
	b)	"Architecture manifests earliest set of design decisions ". Explain.	5	L2
4.	a)	Explain different architectural structures and views.	5	L2
	b)	Compare and contrast different architectural styles with respects to mobile robotics as per standard requirements.	5	L4

BT* Bloom's Taxonomy, L* Level

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NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belagavi)

VII Sem B.E. (CSE) Mid Semester Examinations - I, September 2017

14CS703 - SOFTWARE ARCHITECTURE

Duration: 1 Hour | Max. Marks: 20

*Note: Answer any **One** full question from **each Unit.***

			Marks	BT*
		Unit – I		
1.	a)	How the architecture is influenced by system stakeholders?	6	L*1
	b)	Explain the business qualities of the architecture.	4	L2
2.	a)	Explain the architectural structures with neat diagram.	6	L5
	b)	With the help of appropriate diagrams, explain the availability scenario	4	L2
		Unit – II		
3.	a)	Classify modifiability tactics. Describe various tactics to control changes arrived in the system.	7	L4
	b)	Explain the object oriented and data abstraction, list out the advantages and disadvantages.	3	L2
4.	a)	Identify the usability tactics and explain the tactics to control the user requests	4	L3
	b)	Explain the mobile robotics case study and design any two solutions for the same.	6	L6

BT* Bloom's Taxonomy, L* Level

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NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belagavi)

VII Sem B.E. (CSE) Mid Semester Examinations - I, September 2016

13CS703 – SOFTWARE ARCHITECTURE

uration: 1 Hour

Max. Marks: 20

*Note: Answer any **One** full question from **each Unit.***

			Marks	BT*
		Unit – I		
1.	a)	Identify advantages, disadvantages and conditions (invariants) of pipes and filters styles.	6	L*1
	b)	Describe the importance of software architecture.	4	L2
2.	a)	Define software architecture. Explain Architecture Business Cycle with neat diagram.	7	L4
	b)	Identify any three requirements for design of mobile robotics.	3	L1
		Unit – II		
3.	a)	Define Quality attribute scenario. Describe the various parts of quality attribute scenario.	4	L2
	b)	Explain availability tactics in detail.	6	L4
4.	a)	Explain the general scenario for modifiability and explain with an example.	5	L4
	b)	Determine the various categories of security tactics.	5	L5

3T* Bloom's Taxonomy, L* Level

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