SSN COLLEGE OF ENGINEERING, KALAVAKKAM – 603 110
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
B.E. Computer Science and Engineering
CS6403 Software Engineering

Date: 23.02.2018, 8.00-9.30 AM **UNIT TEST – 2** **Max. Marks: 50**
Academic Year: 2017-2018 EVEN **Batch: 2016-2020**
Semester: 4 **Faculty: Dr. R. Kanchana and Dr. A. Chamundeswari**

Qn.No	Part – A (5 * 2 = 10)	Marks	(KL,COn)
1	Discuss some of the problems that occur when requirements for an application must be elicited from three or four different customers.	2	K4,CO2
2	What are the strengths and weaknesses of informal specifications?	2	K2,CO2
3	Distinguish between functional and non-functional requirements.	2	K2,CO2
4	What is structured system analysis? Mention the tools that are useful for structured analysis.	2	K2,CO2
5	Define *Petri net* and mention an application and its requirement which requires Petri net model for a better analysis.	2	K2,CO2

Part – B Answer all questions (13+13)

6	a) Why should the following constraints not appear in a specification document? Rewrite them in a better way. i. The product must significantly reduce transportation expenses that arise from distributing our books in Coimbatore. ii. The credit card database must be set up at a reasonable cost.	4	K3,CO2
	b) Differentiate user and system requirements. Write a user requirement and corresponding system requirement for *Online course registration* system.	2+3	K3,CO2
	c) Mention the types of non-functional requirements and their metrics.	2+2	K2,CO2
	OR		
7	Consider an automated ticket-issuing system that sells rail tickets. Users select their destination and input a credit card and a personal identification number. The rail ticket is issued and their credit card account charged. When the user presses the start button, a menu display of potential destinations is activated, along with a message to the user to select a destination. Once a destination has been selected, users are requested to input their credit card. Its validity is checked and the user is then requested to input a personal identifier. When the credit transaction has been validated, the ticket is issued. a) Discover any THREE ambiguities or omissions in the ticket-issuing system. Why is it so important that the specification document should have no omissions, contradictions, or ambiguities? b) Identify any three functional requirements. c) Write the complete SRS document following IEEE format.	4+3+6	K3,CO2
8	a) Develop a use case for ONE of the following activities and draw use case diagram: i. Making a withdrawal at an ATM ii. Searching for books (on a specific topic) using an on-line bookstore	5	K3,CO2

	b)	How does a sequence diagram differ from a state diagram? How are they similar?	3	K4,CO2
	c)	What does win-win mean in the context of negotiation during the requirements engineering activity?	2	K2,CO2
	d)	Why are many software organizations reluctant to use formal specifications?	3	K2,CO2

OR

9	a)	Enumerate different techniques for requirements elicitation. Tabulate their advantages and disadvantages.	8	K2,CO2
	b)	Describe the different ways in which the requirements can be validated.	5	K2,CO2

Part – C (14)

10	a)	Consider an automated library circulation system. Every book has a bar code, and every borrower has a card bearing a bar code. When a borrower wishes to check out a book, the librarian scans the bar codes on the book and the borrower's card, and enters C at the computer terminal. Similarly, when a book is returned, it is again scanned and the librarian enters R. Librarians can add books (+) to the library collection or remove them (−). Borrowers can go to a terminal and determine all the books in the library by a particular author (the borrower enters A= followed by the author's name), all the books with a specific title (T= followed by the title), or all the books in a particular subject area (S= followed by the subject area). Finally, if a borrower wants a book currently checked out, the librarian can place a hold on the book so that, when it is returned, it will be held for the borrower who requested it (H= followed by the number of the book). Model these requirements using level – 0 DFD. Evolve level-1 DFD by expanding the processes.	5	K3,CO2
	b)	Develop a **sequence diagram** showing the interactions involved when a student registers for a course in a university. Courses may have limited enrolment. Hence, the registration process must check whether slots are available. Assume that the student accesses an electronic course catalog to find out available courses.	4	K3,CO2
	c)	Draw **state transition diagram** of the control software for: *An automatic washing machine that has different programs for different types of clothes.*	5	K3,CO2

**********B E S T O F L U C K**********

Prepared by	
R. Kanchana	A. Chamundeswari

Reviewed by HoD, CSE