Register Number | | | | | | | | | |

Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam – 603 110

(An Autonomous Institution, Affiliated to Anna University, Chennai)

Department of Computer Science and Engineering

Continuous Assessment Test – II

Question Paper

Degree & Branch	BE (CSE)				**Semester**	IV
Subject Code & Name	UCS1405 Software Engineering				**Regulation: 2018**	
Academic Year	2019-2020 EVEN	**Batch**	2018-2022	**Date**	**29.02.2020**	**FN**
Time: 90 Minutes	**Answer All Questions**				**Maximum: 50 Marks**	

Part – A (6×2 = 12Marks)

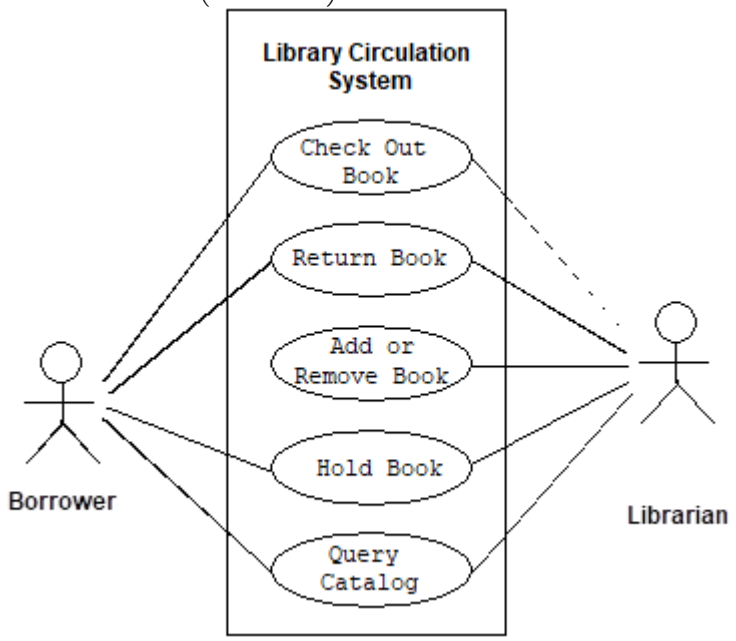
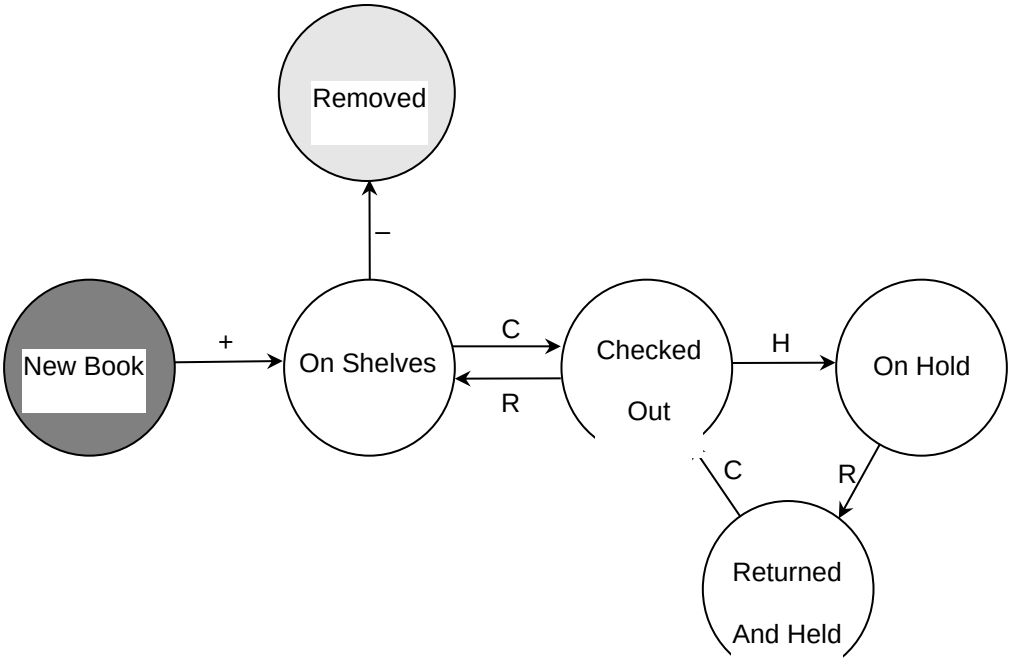
<KL2>	1. Why is Inception / Discovery important in Requirement Engineering? The *inception phase* of the UP encompasses both customer communication and planning activities. By collaborating with stakeholders, business requirements for the software are identified; a rough architecture for the system is proposed; and a plan for the iterative, incremental nature of the ensuing project is developed	<CO3>
<KL2>	2. What is the difference between System requirements and Functional requirements? Justify your answer with an example. system requirements are a more detailed description of the functionality to be provided. The system requirements do notjust specify the services or the features of the system that are required; they also specify the necessary functionality to ensure that these services/features are delivered properly	<CO3>
<KL2>	3. Mention the need for Requirements traceability. You need to keep track of the relationships between requirements, their sources, and the system design so that you can analyze the reasons for proposed changes and the impact that these changes are likely to have on other parts of the system. You need to be able to trace how a change ripples its way through the system.	<CO3>
<KL3>	4. Draw the Use-Case diagram for a JAVA program that finds factorial of N.	<CO3>
<KL2>	4. How are PetriNets useful for Requirement Engineering process? Useful for analysis as it captures dynamic behaviour of the system being modelled. Useful to easily model the system	<CO3>
<KL2>	6. List the design quality attributes. FURPS—functionality, usability, reliability, performance, and supportability	<CO4>

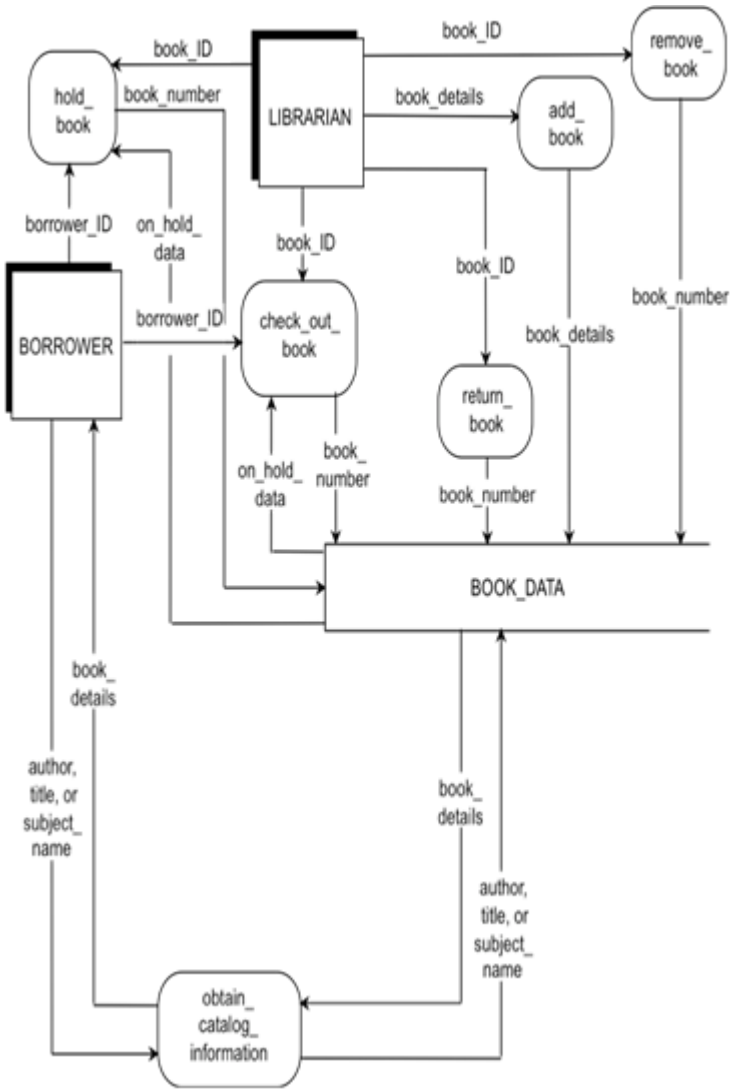
Part – B (3×6 = 18 Marks)

<KL3>	7. Identify functional and non-functional requirements for the following scenario. Telegram is a messaging APP with a focus on speed and security. It is super-fast, simple and free. You can use Telegram on all your devices at the same time — your messages sync seamlessly across any number of your phones, tablets or computers. With Telegram, you can send messages, photos, videos and files of any type (doc, zip, mp3, etc), as well as create groups for up to 200,000 people or channels for broadcasting to unlimited audiences. You can write to your phone contacts and find people by their usernames. As a result, Telegram is like SMS and email combined — and can take care of all your personal or business messaging needs. In addition to this, it supports end-to-end encrypted voice calls.	<CO3>
<KL2>	8. Given a set of non-functional requirements below, identity its type. 1. All data (including media and files) that you send and receive through messages cannot be deciphered when intercepted by your internet service provider, owners of Wi-Fi routers you connect to, or other third parties.	<CO3>

	Security (Product) 2. Anyone can join your group by following a link. If you choose to revoke the link, it will stop working immediately. Usability (Product) 3. Send and receive files of any type, up to 1,5 GB in size each, access them instantly on your other devices. Performance (Product) 4. Simply enable the Emoji keyboard in your iOS device's Settings Operational (Organizational) 5. Edit your messages after posting, delete them so that they disappear for everyone. Ethical (External) Given the following set of requirements, differentiate them as user or system requirements: 1. Can run on PC, Laptops, and PDA etc. - System 2. View profile, friend list - User 3. Replacement page will be shown - System 4. Log out all customers after a period of inactivity - System 5. Updates photos - User	
<KL2>	9.Discuss any THREE design concepts that favors Object Oriented Programming. Abstraction, Information hiding, Separation of concerns, Refactoring, stepwise refinement	<CO4>

Part – C (2×10 = 20 Marks)

	10. Draw the Use-Case diagram for the case study given in Question 12. Draw the state transition diagram for any ONE scenario in it , and develop the process activation table. (3 + 4 + 3)  Set of states is {New Book, Removed, On Shelves, Checked Out, On Hold, Returned And Held} Set of inputs is {C, H, R, +, –} Initial state is New Book Set of final states is {Removed}  Set of states is {New Book, Removed, On Shelves, Checked Out, On Hold, Returned And Held} Set of inputs is {C, H, R, +, –} Initial state is New Book Set of final states is {Removed}	<KL3> <CO3>
	(Or)	
	11. Briefly discuss the requirements elicitation techniques with appropriate diagrams and examples. Refer lecture notes or Smmerville chapter 4.5m (4+3+3)	<KL3> <CO3>

<KL3>	12. 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, level-1 DFD diagram. (3+7) 	<CO4>
<KL3>	13. (3+7) a)How do you assess the quality of software design. Modularity Coupling Cohesion Fan in / Fan out Scope of control / Scope of effect b)Consider the case study given in Question 12. Draw the structure chart (OR) ER diagram to represent the design.	<CO4>