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RAMAIAH
(Approved by NBA & Institute of Technology
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by AICTE, New Delhi & Govt. of Karnataka) Accredited
NAAC with 'A' Grade

EXAMINATIONS SEPTEMBER /OCTOBER 2020
SUPPLEMENTARY SEMESTER / GRADE IMPROVEMENT/ RE –REGISTERED CANDIDATES

Program	:	**B.E. : Computer Science and Engineering**	**Semester**	:	**IV**
Course Name	:	**Software Engineering**	**Max. Marks**	:	**100**
Course Code	:	**CS46**	**Duration**	:	**3 Hrs**

Instructions to the Candidates:

- Answer any one full question from each unit.

UNIT- I

1.	a)	Compare the incremental and agile process model in terms of user requirement, technology awareness, complexity of software, reliability, stakeholder involvement, documentation, time schedule.	CO1	(06)
	b)	Explain the software process and its framework with the appropriate diagram.	CO1	(06)
	c)	Discuss the five steps to assess the "maturity" of an organization's software process and provide a qualitative indication of a maturity level.	CO1	(08)
2.	a)	Discuss the process flow followed in Scrum agile process models with diagram.	CO1	(06)
	b)	Compare the two different ways for representation of Capability Maturity Model Integration (CMMI).	CO1	(06)
	c)	You have been appointed a project manager within an information systems organization. Your job is to build an application that is quite similar to others your team has built, although this one is larger and more complex. Requirements have been thoroughly documented by the customer. What software process model(s) would you choose and why? Justify in choice. Discuss the steps of the selected process model in brief.	CO5	(08)

UNIT– II

3.	a)	What does analysis model and the methods describes? Discuss the elements of the analysis model.	CO2	(07)
	b)	Draw a UML Use Case diagram, to represent the following Library Management System: Patrons have access to the library information to search for book titles and to see whether a book is available. A patron can also reserve a title if all copies are checked out. When patrons bring books to the circulation desk, a clerk checks out the books on a loan. Clerks also check books in. When books are dropped in the return slot, they check in the books. The managers in the library have their own activities. They will print out reports of book titles by category. They also like to see all overdue books. Discuss the use case description template. Which part of a use case description can also be modeled by using an activity diagram?	CO5	(07)
	c)	List the factors on which requirements modeling for WebApps are emphasized. Discuss interaction model for Web and Mobile Apps.	CO2	(06)
4.	a)	List the steps involved in requirements engineering process. Explain the five task encompassed for requirement monitoring.	CO2	(07)
	b)	Compare the requirements modeling for WebApps and generic application. Discuss the situation when to perform explicit analysis activity in WebApps development.	CO2	(07)

c) Describe what is represented in the following diagram. What type of diagram is it? Describe the flow of events and its association. CO5 (06)

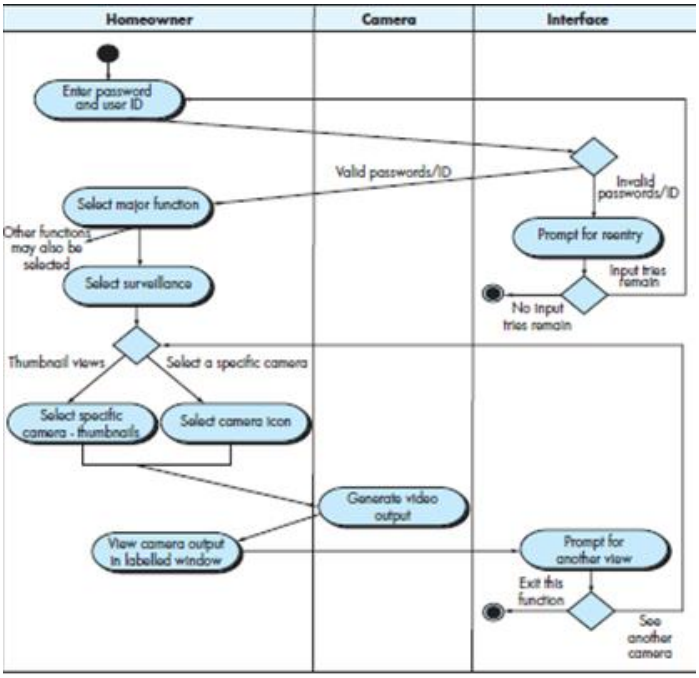

Fig.4(c)

UNIT- III

5. a) How the user interface design process and Interface Design Workflow for Web and Mobile Apps are related. CO2 (06)

b) Briefly describe each of the four elements of the design model with diagram. CO2 (08)

c) You have been appointed a project manager within an information systems organization. Your job is to build an application that is quite similar to others your team has built, although this one is larger and more complex. Requirements have been thoroughly documented by the customer. What architecture style would you choose? Justify in choice. Discuss the selected style in brief. CO5 (06)

6. a) List the design concept to be followed. Compare the relationship between the concept of information hiding as an attribute of effective modularity and the concept of module independence. CO2 (07)

b) Compare the fundamental ways in which architectural style and architectural pattern differs. List the considerations that can influence the architectural design of a mobile app. CO2 (06)

c) List the design principles that allow the user to maintain control. CO5 (07)
Following is the Overall architectural structure for SafeHome with top-level components. Instantiate of the SafeHome architecture for the security system.

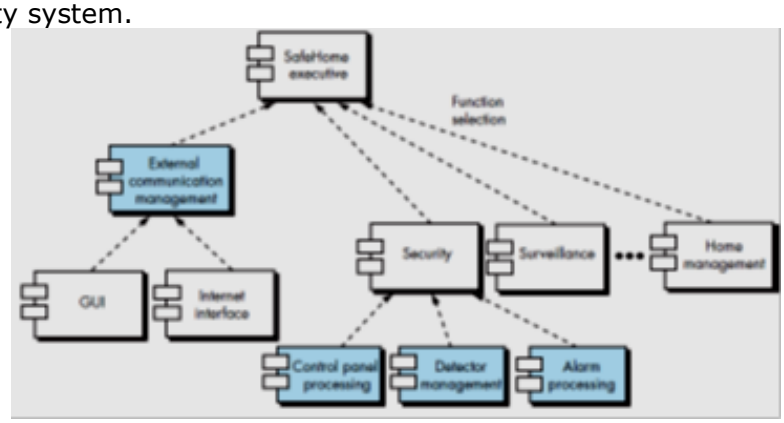

Fig.6(c)

UNIT- IV

7.	a)	Explain the Software Reengineering Process Model that defines six activities.	CO3	(06)
	b)	Discuss the guidelines to be followed for formal technical reviews to control the software quality.	CO3	(07)
	c)	You're the project manager for a major software company. You've been asked to lead a team that's developing "next generation" word-processing software. Create a risk table by identifying minimum of 3- risks for the project. Compare risk components and risk drivers.	CO3, CO5	(07)
8.	a)	Describes five different views of quality. Describe how you would assess the quality of a university before applying to it. What factors would be important? Which would be critical?	CO3, CO5	(08)
	b)	List various software estimation techniques. Discuss the empirical estimation model in detail.	CO3	(06)
	c)	What is time-line chart? Develop a time-line chart for the following: Patrons have access to the library information to search for book titles and to see whether a book is available. A patron can also reserve a title if all copies are checked out. When patrons bring books to the circulation desk, a clerk checks out the books on a loan. Clerks also check books in. When books are dropped in the return slot, they check in the books. The managers in the library have their own activities. They will print out reports of book titles by category. They also like to see all overdue books.	CO3, CO5	(06)

UNIT- V

9.	a)	Discus a set of characteristics that achieve the goal of finding the most errors with a minimum of effort. Compare Black-Box testing and White-Box testing.	CO4	(06)
	b)	Explain the various testing approaches for MobileApps.	CO4	(06)

	c)	Discuss the cyclomatic complexity in Basis path testing for deriving tests cases. Draw a flowgraph for the following section of code. Hence compute the cyclomatic complexity for the code. Include all calculations.
		int a =1, b=2, c;
		if (a > b) c = 23;
		else c = 25;
		while (b < c)
		b = b + 1;
		System.print.outline("answer = " + b);
		return(0);
			CO4, CO5	(08)

10.	a)	Compare verification and validation. Discuss the Software Testing Strategy with diagram.	CO4	(06)
	b)	Discuss the different incremental integration strategies.	CO4	(08)
	c)	Explain the various system-testing conducted outside the scope of the software process and are not conducted solely by software engineers.	CO4	(06)

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