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21CST601

Sixth Semester B. E. Degree Semester End Examination (SEE)

Model Question Paper – 3

SOFTWARE ENGINEERING AND PROJECT MANAGEMENT

Time: 3 Hours] **[Maximum Marks: 100**

Instructions to Students:

Q No		Questions	Marks	CO	RBT Cognitive Level
1	a)	"Scrum is a subset of Agile". Justify.	5	CO1	L3
	b)	Describe concurrent development model used in software development.	8	CO1	L3
	c)	List and explain seven principles that focuses on software engineering practice as a whole.	7	CO1	L2
OR					
2	a)	With a neat diagram, explain the process of XP for developing a software.	7	CO1	L2
	b)	Compare and contrast waterfall and evolutionary software development model.	8	CO1	L3
	c)	Describe a generic process framework for software engineering.	5	CO1	L2
3	a)	Give the IEEE standard structure of an SRS. Prepare an SRS for Agricultural Information Management System which will be helpful for farmers.	8	CO2	L4
	b)	With suitable example, describe the Scenario-based modeling.	7	CO2	L2
	c)	Develop use cases for the following: (i) Train Reservation System (ii) Unified Insurance Management System	5	CO2	L4
OR					
4	a)	Define requirements engineering. List and explain seven distinct tasks of requirements engineering.	8	CO2	L2
	b)	Discuss the significance of use cases in requirements engineering process. Design various use cases for Super market management system.	7	CO2	L5
	c)	How to negotiate and validate requirements? Illustrate with examples.	5	CO2	L3
5	a)	List and explain all the fundamental software design concepts.	10	CO3	L2

	b)	Develop a complete architectural design for Safe home product. Also identify various components used in Safe home product.	10	CO3	L4
OR					
6	a)	Describe basic design principles applicable to Component level design.	8	CO3	L3
	b)	With suitable examples, describe Architectural styles and Architectural Genres.	8	CO3	L2
	c)	Design architectural context diagram for the following systems: (i) Stock Market Trading System (ii) Consumer Products Management System	4	CO3	L4
7	a)	With a neat diagram, describe the debugging process.	6	CO4	L2
	b)	With suitable example, explain basis path testing in detail.	6	CO4	L2
	c)	Describe Validation and System Testing with examples.	8	CO4	L3
OR					
8	a)	Explain a strategic approach to software testing.	8	CO4	L2
	b)	Explain graph based testing methods and boundary value analysis with suitable real time examples.	8	CO4	L3
	c)	Design various test cases for unified seat reservation system.	4	CO4	L4
9	a)	The decisions made by senior management can have a significant impact on the effectiveness of a software engineering team. Provide five examples to illustrate that this is true.	6	CO5	L4
	b)	How to establish a software metrics program? Describe with various steps and goals.	7	CO5	L2
	c)	Describe Empirical estimation models used during estimation of software projects.	7	CO5	L2
OR					
10	a)	"Effective software project management focuses on four P's". Justify this statement with suitable analogy.	8	CO5	L4
	b)	Describe any three software metrics used for software measurement.	6	CO5	L3
	c)	Briefly explain various decomposition techniques used during software project estimations.	6	CO5	L2

1. Answer FIVE FULL questions as per choice.

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21CST601

Sixth Semester B. E. Degree Semester End Examination (SEE)

Model Question Paper – 1

SOFTWARE ENGINEERING AND PROJECT MANAGEMENT

Time: 3 Hours] **[Maximum Marks: 100**

Instructions to Students:

Q No		Questions	Marks	CO	RBT Cognitive Level
1	a)	Describe the essence of software engineering practice.	6	CO1	L2
	b)	Briefly explain various specialized process models.	8	CO1	L3
	c)	Write 12 agility principles for those who want to achieve agility in their software development process.	6	CO1	L2
OR					
2	a)	What is meant by Industrial XP? Write an XP user story that describes the "Favorites" feature available on most of the web browsers.	7	CO1	L3
	b)	With a neat diagram, describe the overall flow of the Scrum process.	6	CO1	L2
	c)	Provide three examples of software projects that would be amenable to the component based model. Explain your answer with justification.	7	CO1	L4
3	a)	Discuss some of the problems that occur when requirements must be elicited from different customers.	5	CO2	L2
	b)	Develop a complete use cases for the following activities: (i) University Library System (ii) Buying a Stock using an online brokerage account (iii) Using credit card at a Restaurant	9	CO2	L4
	c)	What is the purpose of domain analysis? How is it related to the concept of requirements patterns? Illustrate with suitable example.	6	CO2	L2
OR					
4	a)	Define requirements engineering. List and explain seven distinct tasks of requirements engineering.	8	CO2	L2
	b)	The department of Public works for a large city has decided to develop a web-based Pothole Tracking and Repair System (PTRS). Assume suitable places, persons and attributes	8	CO2	L5

		involved in PTRS. Draw a UML use case diagram for PTRS. Also develop an activity diagram for any one aspect of PTRS.			
	c)	How to negotiate requirements? Describe with suitable examples.	4	CO2	L2
5	a)	Propose several software quality guidelines and attributes for a good design.	8	CO3	L3
	b)	Briefly explain the taxonomy of architectural styles.	8	CO3	L2
	c)	Draw the architectural context diagram for Hospital Management System.	4	CO3	L4
		OR			
6	a)	Describe Cohesion and coupling with suitable examples.	8	CO3	L2
	b)	Explain the following design concepts: design patterns, separation of concerns, refinement and refactoring.	4	CO3	L2
	c)	Briefly describe each of the four elements of the design model.	8	CO3	L2
7	a)	Explain a strategic approach to software testing.	8	CO4	L2
	b)	With suitable example, explain basis path testing in detail.	6	CO4	L2
	c)	Compare and contrast top-down and bottom-up integration testing strategies.	6	CO4	L4
		OR			
8	a)	With a neat diagram, describe the debugging process.	6	CO4	L2
	b)	Will exhaustive testing guarantee that the program is 100 percent correct? Illustrate with suitable examples.	6	CO4	L5
	c)	Distinguish between white-box and black-box testing.	8	CO4	L3
9	a)	Briefly explain the management spectrum in software project management.	6	CO5	L2
	b)	How to establish a software metrics program? Describe with various steps and goals.	7	CO5	L2
	c)	Describe Empirical estimation models used during estimation of software projects.	7	CO5	L2
		OR			
10	a)	The decisions made by senior management can have a significant impact on the effectiveness of a software engineering team. Provide five examples to illustrate that this is true.	6	CO5	L4
	b)	Briefly explain any four software metrics used for software measurement.	8	CO5	L3
	c)	List and explain the three major categories of software engineering resources.	6	CO5	L2

1. Answer FIVE FULL questions as per choice.

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21CST601

Sixth Semester B. E. Degree Semester End Examination (SEE)

Model Question Paper – 3

SOFTWARE ENGINEERING AND PROJECT MANAGEMENT

Time: 3 Hours] **[Maximum Marks: 100**

Instructions to Students:

Q No		Questions	Marks	CO	RBT Cognitive Level
1	a)	"Scrum is a subset of Agile". Justify.	5	CO1	L3
	b)	Describe concurrent development model used in software development.	8	CO1	L3
	c)	List and explain seven principles that focuses on software engineering practice as a whole.	7	CO1	L2
OR					
2	a)	With a neat diagram, explain the process of XP for developing a software.	7	CO1	L2
	b)	Compare and contrast waterfall and evolutionary software development model.	8	CO1	L3
	c)	Describe a generic process framework for software engineering.	5	CO1	L2
3	a)	Give the IEEE standard structure of an SRS. Prepare an SRS for Agricultural Information Management System which will be helpful for farmers.	8	CO2	L4
	b)	With suitable example, describe the Scenario-based modeling.	7	CO2	L2
	c)	Develop use cases for the following: (i) Train Reservation System (ii) Unified Insurance Management System	5	CO2	L4
OR					
4	a)	Define requirements engineering. List and explain seven distinct tasks of requirements engineering.	8	CO2	L2
	b)	Discuss the significance of use cases in requirements engineering process. Design various use cases for Super market management system.	7	CO2	L5
	c)	How to negotiate and validate requirements? Illustrate with examples.	5	CO2	L3
5	a)	List and explain all the fundamental software design concepts.	10	CO3	L2

	b)	Develop a complete architectural design for Safe home product. Also identify various components used in Safe home product.	10	CO3	L4
OR					
6	a)	Describe basic design principles applicable to Component level design.	8	CO3	L3
	b)	With suitable examples, describe Architectural styles and Architectural Genres.	8	CO3	L2
	c)	Design architectural context diagram for the following systems: (i) Stock Market Trading System (ii) Consumer Products Management System	4	CO3	L4
7	a)	With a neat diagram, describe the debugging process.	6	CO4	L2
	b)	With suitable example, explain basis path testing in detail.	6	CO4	L2
	c)	Describe Validation and System Testing with examples.	8	CO4	L3
OR					
8	a)	Explain a strategic approach to software testing.	8	CO4	L2
	b)	Explain graph based testing methods and boundary value analysis with suitable real time examples.	8	CO4	L3
	c)	Design various test cases for unified seat reservation system.	4	CO4	L4
9	a)	The decisions made by senior management can have a significant impact on the effectiveness of a software engineering team. Provide five examples to illustrate that this is true.	6	CO5	L4
	b)	How to establish a software metrics program? Describe with various steps and goals.	7	CO5	L2
	c)	Describe Empirical estimation models used during estimation of software projects.	7	CO5	L2
OR					
10	a)	"Effective software project management focuses on four P's". Justify this statement with suitable analogy.	8	CO5	L4
	b)	Describe any three software metrics used for software measurement.	6	CO5	L3
	c)	Briefly explain various decomposition techniques used during software project estimations.	6	CO5	L2

1. Answer FIVE FULL questions as per choice.

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21CST601

Sixth Semester B. E. Degree Semester End Examination (SEE)

Model Question Paper – 1

SOFTWARE ENGINEERING AND PROJECT MANAGEMENT

Time: 3 Hours] **[Maximum Marks: 100**

Instructions to Students:

Q No		Questions	Marks	CO	RBT Cognitive Level
1	a)	Describe the essence of software engineering practice.	6	CO1	L2
	b)	Briefly explain various specialized process models.	8	CO1	L3
	c)	Write 12 agility principles for those who want to achieve agility in their software development process.	6	CO1	L2
OR					
2	a)	What is meant by Industrial XP? Write an XP user story that describes the "Favorites" feature available on most of the web browsers.	7	CO1	L3
	b)	With a neat diagram, describe the overall flow of the Scrum process.	6	CO1	L2
	c)	Provide three examples of software projects that would be amenable to the component based model. Explain your answer with justification.	7	CO1	L4
3	a)	Discuss some of the problems that occur when requirements must be elicited from different customers.	5	CO2	L2
	b)	Develop a complete use cases for the following activities: (i) University Library System (ii) Buying a Stock using an online brokerage account (iii) Using credit card at a Restaurant	9	CO2	L4
	c)	What is the purpose of domain analysis? How is it related to the concept of requirements patterns? Illustrate with suitable example.	6	CO2	L2
OR					
4	a)	Define requirements engineering. List and explain seven distinct tasks of requirements engineering.	8	CO2	L2
	b)	The department of Public works for a large city has decided to develop a web-based Pothole Tracking and Repair System (PTRS). Assume suitable places, persons and attributes	8	CO2	L5

		involved in PTRS. Draw a UML use case diagram for PTRS. Also develop an activity diagram for any one aspect of PTRS.			
	c)	How to negotiate requirements? Describe with suitable examples.	4	CO2	L2
5	a)	Propose several software quality guidelines and attributes for a good design.	8	CO3	L3
	b)	Briefly explain the taxonomy of architectural styles.	8	CO3	L2
	c)	Draw the architectural context diagram for Hospital Management System.	4	CO3	L4
		OR			
6	a)	Describe Cohesion and coupling with suitable examples.	8	CO3	L2
	b)	Explain the following design concepts: design patterns, separation of concerns, refinement and refactoring.	4	CO3	L2
	c)	Briefly describe each of the four elements of the design model.	8	CO3	L2
7	a)	Explain a strategic approach to software testing.	8	CO4	L2
	b)	With suitable example, explain basis path testing in detail.	6	CO4	L2
	c)	Compare and contrast top-down and bottom-up integration testing strategies.	6	CO4	L4
		OR			
8	a)	With a neat diagram, describe the debugging process.	6	CO4	L2
	b)	Will exhaustive testing guarantee that the program is 100 percent correct? Illustrate with suitable examples.	6	CO4	L5
	c)	Distinguish between white-box and black-box testing.	8	CO4	L3
9	a)	Briefly explain the management spectrum in software project management.	6	CO5	L2
	b)	How to establish a software metrics program? Describe with various steps and goals.	7	CO5	L2
	c)	Describe Empirical estimation models used during estimation of software projects.	7	CO5	L2
		OR			
10	a)	The decisions made by senior management can have a significant impact on the effectiveness of a software engineering team. Provide five examples to illustrate that this is true.	6	CO5	L4
	b)	Briefly explain any four software metrics used for software measurement.	8	CO5	L3
	c)	List and explain the three major categories of software engineering resources.	6	CO5	L2

1. Answer FIVE FULL questions as per choice.

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Sixth Semester B. E. Degree Semester End Examination (SEE)

Model Question Paper – 2

SOFTWARE ENGINEERING AND PROJECT MANAGEMENT

Time: 3 Hours] **[Maximum Marks: 100**

Instructions to Students:

Q No		Questions	Marks	CO	RBT Cognitive Level
1	a)	List various prescriptive process models. Explain any two models in detail.	7	CO1	L2
	b)	With a neat diagram, describe the unified process model for software development.	7	CO1	L2
	c)	With a neat diagram, illustrate the Extreme Programming process.	6	CO1	L3
OR					
2	a)	Define software engineering and the software process. Describe a generic process framework for software engineering.	10	CO1	L2
	b)	Explain the following agile process models: Scrum, DSDM and Agile Modeling.	10	CO1	L2
3	a)	Develop a complete use cases for the following activities: (i) University Library System (ii) Buying a Stock using an online brokerage account (iii) Using credit card at a Restaurant	9	CO2	L4
	b)	Suggest who might be stakeholders in a Hospital management system. Explain why it is almost inevitable that the requirements of different stakeholders will conflict in some way.	6	CO2	L4
	c)	How to validate requirements? Describe with suitable examples.	5	CO2	L2
OR					
4	a)	Prepare a complete SRS for Gasoline pump control system.	8	CO2	L4
	b)	Discuss the significance of use cases in requirements engineering process. Design various use cases for University Employee management system.	7	CO2	L5
	c)	Briefly explain Scenario-based modeling.	5	CO2	L2
5	a)	What is meant by design classes? List and explain four characteristics of a well-formed design class.	6	CO3	L2

	b)	Suggest and justify the architectural style for the online Jewellery Mart system. Also identify major components used in designing online Jewellery Mart system.	6	CO3	L4
	c)	Describe basic design principles applicable to Component level design.	8	CO3	L3
OR					
6	a)	Illustrate dimensions of the design model with a neat sketch.	8	CO3	L2
	b)	Design architectural context diagram for the following systems: (i) Online Gaming System (ii) Agricultural Products Management System	4	CO3	L4
	c)	Describe Component based development in detail.	8	CO3	L3
7	a)	Distinguish between white-box and black-box testing.	6	CO4	L3
	b)	Describe any three system testing types with real time examples.	6	CO4	L3
	c)	Explain Basis path testing in detail.	8	CO4	L2
OR					
8	a)	Design various test cases for digital advertisement agency management system.	6	CO4	L4
	b)	Distinguish between Top-down Integration testing and Bottom-up Integration testing.	6	CO4	L3
	c)	Explain graph based testing methods and boundary value analysis with suitable real time examples.	8	CO4	L3
9	a)	Briefly explain an empirical estimation models for computer software.	6	CO5	L2
	b)	Illustrate the roles of software teams and team leaders in software project management.	6	CO5	L3
	c)	How to establish a software metrics program? Illustrate with various steps and goals.	8	CO5	L3
OR					
10	a)	"Effective software project management focuses on four P's". Justify this statement with suitable analogy.	8	CO5	L4
	b)	Illustrate the concept of integrating metrics within the software process using collection process.	7	CO5	L3
	c)	List and explain various project resources.	5	CO5	L2

1. Answer FIVE FULL questions as per choice.