

SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

QUESTION BANK



VII SEMESTER

1904710 AGILE SOFTWARE DEVELOPMENT

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QUESTION BANK

SUBJECT : 1904710 AGILE SOFTWARE DEVELOPMENT

SEM / YEAR: VII/IV

UNIT I FUNDAMENTALS OF AGILE

The Genesis of Agile, Introduction and background, Agile Manifesto and Principles, Overview of Scrum, Extreme Programming, Feature Driven development, Lean Software Development, Agile project management, Design and development practices in Agile projects, Test Driven Development, Continuous Integration, Refactoring, Pair Programming. Simple Design, User Stories, Agile Testing, Agile Tools.

PART – A

Q.No	Questions	BT Level	Competence
1.	Define agile software development..	Remember	BTL1
2.	List out core values of agile software development.	Remember	BTL1
3.	Discuss on agile software development process.	Understand	BTL2
4.	Give an example of agile software development.	Understand	BTL2
5.	Define software development cycle.	Remember	BTL1
6.	List out the advantages of agile software development.	Remember	BTL1
7.	Examine the disadvantages of agile software development.	Understand	BTL2
8.	Identify purpose of manifesto for agile software development.	Remember	BTL1
9.	How does the project manager organize the new project work?	Understand	BTL2
10.	What are the values of manifesto for agile software development?	Remember	BTL1
11.	List the Silent features of Scrum.	Understand	BTL2
12.	Define agile project management	Remember	BTL1
13.	Define agile manifesto and principle	Remember	BTL1
14.	Formulate values of extreme programming.	Understand	BTL2
15.	Differentiate FDD versus LSD	Understand	BTL2
16.	Discuss about Extreme Programming (XP).	Understand	BTL2
17.	What is a development practices in agile projects management.	Remember	BTL1
18.	Define continuous integration.	Understand	BTL2

19.	Discuss about refactoring.	Understand	BTL2
20.	Discuss about pair programming.	Understand	BTL2
21.	Examine agile testing	Remember	BTL1
22.	Discuss test driven development.	Understand	BTL2
23.	Analyze user stories in agile.	Remember	BTL1
24.	Explain about agile tools.	Remember	BTL1
PART – B			
1.	Discuss about agile software development process and development cycle.	Understand	BTL3
2.	Interpret agile process with the help of suitable example and show how Agile helps to build quality product	Apply	BTL3
3.	Design the various roles in Agile process. How are these roles different from traditional roles?	Create	BTL6
4.	Examine agile software development with suitable example.	Analyze	BTL4
5.	Discuss about advantages and disadvantages of agile software development.	Evaluate	BTL5
6.	Compare and contrast about 12 principles of agile manifesto for software development.	Apply	BTL3
7.	Explain manifesto for agile software development.	Evaluate	BTL5
8.	Illustrate the silent future of scrum.	Apply	BTL3
9.	What is Extreme Programming (XP)? Explain Practices and Basic principles of Extreme programming.	Analyze	BTL4
10.	Explain life cycle and applications of extreme programming.	Analyze	BTL4
11.	Explain about feature-driven development.	Analyze	BTL4
12.	Analyze and explain lean software development.	Analyze	BTL4
13.	Illustrate phases of agile model in designing system.	Apply	BTL3
14.	Describe principles and the uses of agile model in designing system.	Apply	BTL3
15.	Explain about test driven development and continuous integration.	Analyze	BTL4
16.	Describe in detail about pair programming.	Evaluate	BTL5
17.	Evaluate features of agile testing and agile testing principles.	Evaluate	BTL5
PART – C			
1.	Analyze and explain in detail about genesis of agile.	Evaluate	BTL5
2.	Evaluate and explain about FDD and LSD.	Evaluate	BTL5
3.	Design and discuss on agile testing methodologies and strategies.	Create	BTL6
4.	Design agile testing life cycle and develop the test plan.	Create	BTL6
5.	Evaluate the various Popular Agile Tools for Software Development.	Evaluate	BTL5

UNIT II - AGILE SCRUM FRAMEWORK

Introduction to Scrum, Project phases, Agile Estimation, Planning game, Product backlog, Sprint backlog, Iteration planning, User story definition, Characteristics and content of user stories, Acceptance tests and Verifying stories, Project velocity, Burn down chart and Sprint planning. And retrospective, Daily scrum, Scrum roles – Product Owner, Scrum Master, Scrum Team. Scrum case study, Tools for Agile project management.

PART – A

Q.No	Questions	BT Level	Competence
1.	Describe scrum.	Understand	BTL2
2.	List project phases in scrum.	Understand	BTL2
3.	Describe the testing strategies in scrum.	Understand	BTL2
4.	What is an estimation technique in agile.	Remember	BTL1
5.	Give the difference between product backlog versus sprint backlog.	Understand	BTL2
6.	Define user story.	Remember	BTL1
7.	Outline what is product backlog?	Remember	BTL1
8.	Define effective sprint backlog.	Remember	BTL1
9.	Describe the iteration planning.	Remember	BTL1
10.	List 3C's in user stories.	Remember	BTL1
11.	Discuss the importance of creating user stories.	Understand	BTL2
12.	What is retrospective in agile.	Understand	BTL2
13.	Differentiate burn down chart and sprint planning.	Understand	BTL2
14.	Justify the importance of agile retrospective.	Understand	BTL2
15.	Define scrum master.	Remember	BTL1
16.	Discuss about scrum roles.	Understand	BTL2
17.	Define project velocity.	Remember	BTL1
18.	How do you decide the right tool for agile project management?	Understand	BTL2
19.	Invent the process control in FDD.	Understand	BTL2
20.	Discuss about adaptive software development.	Understand	BTL2
21.	Justify the importance of burn down chart.	Remember	BTL1
22.	What is meant by daily scrum?	Remember	BTL1
23.	Discuss about acceptance tests	Understand	BTL2
24.	Define scrum roles.	Remember	BTL1
PART –B			
1.	Explain the concepts of scrum master. What is the need of Scrum and evaluate what values are provided by Scrum?	Evaluate	BTL5
2.	Describe about the phases of the agile development life cycle.	Apply	BTL3
3.	Find and Analyze how team composition and working environment are managed in scrum?	Analyze	BTL4

4.	Discuss how measurement helps in monitoring the progress in Agile approach? Discuss.	Apply	BTL3
5.	Explain about estimation technique in agile.	Analyze	BTL4
6.	Design and discuss about product backlog and sprint backlog.	Create	BTL6
7.	Analyze disadvantages of using user stories in agile software development.	Analyze	BTL4
8.	Interpret 30 day sprint and release in detail.	Apply	BTL3
9.	Apply the characteristics and content of user stories.	Apply	BTL3
10.	Discuss about various advanced Scrum applications? How are they applicable?	Evaluate	BTL5
11.	Describe about user stories in agile software development, importance of creating user stories.	Evaluate	BTL5
12.	Analyze advantages of using user stories in agile software development.	Analyze	BTL4
13.	Write in detail about various roles of SCRUM.	Analyze	BTL4
14.	Examine about agile estimation techniques.	Apply	BTL3
15.	What is meant by refactoring? Describe How refactoring helps in Agile development?	Apply	BTL3
16.	Apply the concept of acceptance tests and verifying stories and project velocity.	Apply	BTL3
17.	Examine about iteration planning and explain preparation of iteration planning.	Evaluate	BTL5

PART – C

1.	Evaluate and explain production metrics in SCRUM.	Evaluate	BTL5
2.	Explain in detail about adaptive software development.	Evaluate	BTL5
3.	Compose method for burn down chart, sprint planning and retrospective.	Create	BTL6
4.	Explain various positives and negatives of agile software development.	Evaluate	BTL5
5.	Formulate tools for agile project management with a case study.	Create	BTL6

UNIT III - AGILE TESTING

The Agile lifecycle and its impact on testing, Test-Driven Development (TDD), Unit framework and tools for TDD, Testing user stories - acceptance tests and scenarios, Planning and managing testing cycle, Exploratory testing, Risk based testing, Regression tests, Test Automation, Tools to support the Agile tester.

PART - A

Q.No	Questions	BT Level	Competence
1.	Relate phases of agile life cycle.	Understand	BTL2
2.	Draw the agile lifecycle.	Remember	BTL1
3.	Define agile test plan.	Remember	BTL1
4.	Describe higher efficiency in agile testing.	Remember	BTL1
5.	Define agile testing.	Remember	BTL1

6.	Discover challenges during agile testing.	Understand	BTL2
7.	Summarize on test driven development.	Understand	BTL2
8.	Compare TDD and traditional testing	Understand	BTL2
9.	List the advantages of test driven development.	Remember	BTL1
10.	Identify approaches of test driven development.	Remember	BTL1
11.	Explain two approaches of test driven development.	Understand	BTL2
12.	How would you describe unit testing frameworks?	Understand	BTL2
13.	Demonstrate how TDD relies on mocking and stubbing tools.	Remember	BTL1
14.	Interpret the term continuous integration.	Understand	BTL2
15.	Analyze how test data builders used in continuous integration?	Remember	BTL1
16.	Show tests for writing great user stories.	Remember	BTL1
17.	Draw the image of types of acceptance testing.	Understand	BTL2
18.	Summarize the uses of acceptance testing.	Remember	BTL1
19.	Incorporate business acceptance testing.	Understand	BTL2
20.	How do you shape alpha and beta testing?	Remember	BTL1
21.	Interpret how to successfully manage your agile testing life cycle.	Understand	BTL2
22.	How to select the right test automation tools?	Remember	BTL1
23.	When to perform Risk-based Testing?	Understand	BTL2
24.	Explain why use exploratory testing?	Remember	BTL1
PART - B			
1.	Analyze the different phases of agile testing life cycle.	Analyze	BTL4
2.	What are the limitations and the benefits of agile testing?	Apply	BTL3
3.	Discuss the advantages and disadvantages of test driven development.	Apply	BTL3
4.	Discuss in detail about test driven development (TDD)? Also describe process of TDD.	Apply	BTL3
5.	Analyze and justify approaches of test driven development.	Analyze	BTL4
6.	What are the different Tools and Techniques of Test-Driven Development?	Evaluate	BTL5
7.	How would you Learn to formulate tests for writing great user stories?	Create	BTL6
8.	Define development and acquisition of knowledge and explain in detail.	Analyze	BTL4
9.	Describe the following: (i) Types of Acceptance Testing (7) (ii) Use of Acceptance Testing (6)	Analyze	BTL4
10.	Describe about advantages and disadvantages of acceptance testing.	Apply	BTL3
11.	List out the types of acceptance testing and explain them.	Analyze	BTL4
12.	Analyze the top user acceptance testing scenarios with example.	Analyze	BTL4
13.	Illustrate in detail on strategies to manage your agile testing life cycle.	Apply	BTL3
14.	Summarize the importance of exploratory testing for CI/CD exploratory testing.	Analyze	BTL4

15.	Summarize Approach of Risk-based Testing.	Analyze	BTL4
16.	Illustrate how to choose an agile regression testing strategy and when to do regression testing in agile?	Apply	BTL3
17.	Explain the areas where automation can play an important role.	Evaluate	BTL5

PART – C

1.	Assess the challenges of migrating to agile methodologies.	Evaluate	BTL5
2.	Explain in detail on the following: (i) The Agile lifecycle and its impact on testing (8) (ii) Planning and managing testing cycle(7)	Evaluate	BTL5
3.	Explain How to Build and Implement an Agile Regression Testing Strategy? How to Implement Regression Testing in Agile?	Evaluate	BTL5
4.	Design the concept of User stories, planning and Story-Card-Maturity Model (SMM).	Create	BTL6
5.	What way would you design suitable Agile Test Automation Tools. Explain in detail.	Create	BTL6

UNIT IV – CORBA

Agile design practices, Role of design Principles including Single Responsibility Principle, Open Closed Principle, Liskov Substitution Principle, Interface Segregation Principles, Dependency Inversion Principle in Agile Design, Need and significance of Refactoring, Refactoring Techniques, Continuous Integration, Automated build tools, Version control.

PART – A

Q.No	Questions	BT Level	Competence
1.	Define designing system.	Remember	BTL1
2.	Define requirement analysis in designing system.	Remember	BTL1
3.	Associate phases of agile model in designing system.	Understand	BTL2
4.	Describe the principles of agile model.	Remember	BTL1
5.	Summarize uses of agile model in designing system.	Understand	BTL2
6.	Quote on single responsibility in SOLID.	Remember	BTL1
7.	Define open closed design principle.	Remember	BTL1
8.	Differentiate two primary ways of implementing the interfaces.	Understand	BTL2
9.	Define Liskov Substitution principle.	Remember	BTL1
10.	Draw Banking application serves the withdrawal functionality to its users.	Understand	BTL2
11.	Point out using the open/closed principle how to make the code extensible.	Understand	BTL2
12.	Show when is a subtype substitutable for its supertype?	Remember	BTL1
13.	Summarize signature rule method argument types.	Understand	BTL2
14.	Generalize the term exception.	Remember	BTL1
15.	Differentiate interface segregation principle with traditional method.	Remember	BTL1
16.	How do you formulate consequences of failing to apply the interface segregation principle?	Remember	BTL1

17.	Show the differences in increased coupling and decreased reusability.	Understand	BTL2
18.	Write any two strategies to ensure compliance with the interface segregation principle.	Understand	BTL2
19.	List the requirement of dependency inversion principle.	Understand	BTL2
20.	Clarify why code refactoring is important in software development.	Understand	BTL2
21.	List most common code refactoring techniques.	Understand	BTL2
22.	Define code refactoring.	Remember	BTL1
23.	What is Continuous Integration and Why it is Important?	Remember	BTL1
24.	Evaluate refactoring by abstraction.	Remember	BTL1
PART – B			
1.	Show the phases of agile model in designing system.	Apply	BTL3
2.	What are the principle to construct agile model in detail? Also mention uses of agile model.	Create	BTL6
3.	Identify and narrate the single responsibility.	Apply	BTL3
4.	Discuss the advantages and disadvantages of agile model in designing system.	Apply	BTL3
5.	Apply and demonstrate the SOLID principle is an acronym that stands for 5 key principles in software development	Apply	BTL3
6.	How would you examine open closed design principle?	Analyze	BTL4
7.	Evaluate the Liskov Substitution Principle.	Evaluate	BTL5
8.	Describe the different practices are already enforced by Java's overriding rules.	Apply	BTL3
9.	Briefly describe The Interface Segregation Principle is a design principle in object-oriented programming that states that no client should be forced to depend on interfaces they don't use.	Apply	BTL3
10.	Describe the impact on Failing to apply the Interface Segregation Principle (ISP) in frontend development can lead to several undesirable consequences.	Apply	BTL3
11.	Analyze misconceptions associated with the Interface Segregation Principle in the context of frontend development.	Analyze	BTL4
12.	Examine in detail about strategies to ensure compliance with the interface segregation principle in frontend development.	Analyze	BTL4
13.	Summarize on profound impact on the ilities of a frontend application.	Analyze	BTL4
14.	Analyze and explain the dependency inversion principle on which most of the design patterns are built upon.	Analyze	BTL4
15.	What is code refactoring? Discuss why code refactoring is important in software development?	Apply	BTL3
16.	Demonstrate in detail about most common code refactoring techniques.	Apply	BTL3
17.	What is continuous integration? Evaluate the importance of continuous integration.	Evaluate	BTL5
PART – C			
1.	How do you compute challenges of continuous integration	Evaluate	BTL5
2.	Analyze the best continuous integration practices in agile model.	Evaluate	BTL5

3.	Demonstrate why version control system is so important? Evaluate types of version control systems.	Evaluate	BTL5
4.	Formulate the following: (i) Need and significance of Refactoring (8) (ii)Refactoring techniques.(7)	Create	BTL6
5.	Design the different agile requirements prioritization in detail.	Create	BTL6

UNIT V - INDUSTRY TRENDS

Market scenario and adoption of Agile, Agile ALM, Roles in an Agile project, Agile applicability, Agile in Distributed teams, Business benefits, Challenges in Agile, Risks and Mitigation, Agile projects on Cloud, Balancing Agility with Discipline, Agile rapid development technologies.

PART - A

Q.No	Questions	BT Level	Competence
1.	Point out market scenario and adoption of agile.	Understand	BTL2
2.	Relate adoption of Agile.	Understand	BTL2
3.	Define Agile ALM.	Remember	BTL1
4.	Discuss about roles in an agile project.	Understand	BTL2
5.	How Agile applicability is defined?	Understand	BTL2
6.	Define Agile in distributed teams.	Remember	BTL1
7.	Associate business benefits in agile.	Understand	BTL2
8.	Define application lifecycle management	Remember	BTL1
9.	Describe about challenges in Agile.	Remember	BTL1
10.	Define agile management theory.	Remember	BTL1
11.	Discuss risks in agile.	Understand	BTL2
12.	State the situations of Mitigation in agile software development.	Understand	BTL2
13.	How the agile projects on cloud stored?	Remember	BTL1
14.	Show how rapid development technologies used in agile?	Remember	BTL1
15.	Describe feature definition.	Understand	BTL2
16.	What is the planning in distributed agile projects.	Remember	BTL1
17.	What is reflective processes in agile distributed Teams.	Remember	BTL1
18.	Describe agile principles.	Remember	BTL1
19.	Examine organizational culture and agile distributed teams.	Understand	BTL2
20.	Give the application of agile principles in non-software projects.	Understand	BTL2
21.	List most common benefits of an agile culture.	Remember	BTL1
22.	What is risks and mitigation? Why it is Important?	Understand	BTL2
23.	Give challenges in agile development.	Remember	BTL1
24.	Define agile rapid development technologies.	Remember	BTL1

PART – B

1.	Demonstrate about advanced Market scenario and adoption of Agile.	Apply	BTL3
2.	Evaluate and discuss about application lifecycle management.	Evaluate	BTL5

3.	Identify about roles in an agile project.	Apply	BTL3
4.	Discuss about agile applicability and agile in distributed teams.	Apply	BTL3
5.	Discuss in detail about throughput and value added in FDD.	Apply	BTL3
6.	Describe what are the Business benefits of agile development?	Analyze	BTL4
7.	Construct management accounting for product development and throughput accounting for software product development.	Create	BTL6
8.	Show and track the agile distributed projects.	Apply	BTL3
9.	Explain about challenges in Agile.	Analyze	BTL4
10.	Describe in detail on risks and mitigation, agile projects on cloud.	Analyze	BTL4
11.	Analyze technologies available for rapid development.	Analyze	BTL4
12.	Evaluate throughput versus cost models in agile product development.	Evaluate	BTL5
13.	Explain in detail about financial metrics in traditional method of software development and agile techniques.	Remember	BTL4
14.	Estimate balancing agility with discipline.	Apply	BTL3
15.	Analyze and explain organizational culture and agile distributed teams	Apply	BTL3
16.	Explain how the constraints affects the product mix.	Analyze	BTL4
17.	Evaluate agile rapid development technologies.	Evaluate	BTL5

PART – C

1.	Explain seven reasons why cloud computing is the best for agile software development.	Evaluate	BTL5
2.	Explain in detail about agile applicability and agile in distributed teams,	Evaluate	BTL5
3.	Evaluate the roles and responsibilities within the Scrum framework for Agile implementation.	Evaluate	BTL5
4.	Design and develop business benefits of agile software development and list the challenges.	Create	BTL6
5.	Develop suitable technology for a scenario from available agile rapid development technologies.	Create	BTL6