

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2024
 Fourth Semester
Computer Science and Engineering
20CSPC403 - OBJECT ORIENTED SOFTWARE ENGINEERING
 Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (MCQ) (20 × 1 = 20 Marks)

Answer ALL Questions

	<i>Marks</i>	<i>K- Level</i>	<i>CO</i>
1. What is the first step in the software development lifecycle? (a) Testing (b) Coding (c) System Design (d) Preliminary Investigation and Analysis	1	K1	CO1
2. Agile Software Development is based on (a) Incremental Development (b) Iterative Development (c) Linear Development (d) Both Incremental and Iterative Development	1	K1	CO1
3. Which of the following model can be chosen if the development team has less experience on similar projects? (a) Waterfall (b) RAD (c) Spiral (d) Iterative Enhancement Model	1	K1	CO1
4. Which one of the following is a requirement that fits in a developer's module? (a) Availability (b) Testability (c) Usability (d) Flexibility	1	K1	CO2
5. According to components of FURPS+, which of the following does not belong to S? (a) Testability (b) Speed Efficiency (c) Serviceability (d) Installability	1	K1	CO2
6. Which of the following pattern is the basis of interaction management in many web-based systems? (a) architecture (b) repository pattern (c) model-view-controller (d) different operating system	1	K1	CO2
7. Which of the following UML diagrams has a static view? (a) Collaboration (b) Use case (c) State chart (d) Activity	1	K1	CO3
8. Which diagram in UML shows a complete or partial view of the structure of a modeled system at a specific time? (a) Sequence Diagram (b) Collaboration Diagram (c) Class Diagram (d) Object Diagram	1	K1	CO3
9. Which of the following diagram is time oriented? (a) Collaboration (b) Sequence (c) Activity (d) None of the mentioned	1	K1	CO3
10. Which of the following pattern is used where we need to treat a group of objects in similar way as a single object? (a) Composite Pattern (b) Facade Pattern (c) Flyweight Pattern (d) Decorator Pattern	1	K1	CO4
11. Which of the following describes the Bridge pattern correctly? (a) This pattern builds a complex object using simple objects and using a step by step approach. (b) This pattern refers to creating duplicate object while keeping performance in mind. (c) This pattern is used when creation of object directly is costly. (d) This pattern is used when we need to decouple an abstraction from its implementation so that the two can vary independently.	1	K1	CO4
12. A package diagram consists of the following? (a) Package symbols (b) Groupings of Use cases, classes, components (c) Interface (d) Package symbols, Groupings of Use cases, classes & components	1	K1	CO4

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| 13. Which of the following testing is also known as white-box testing?
(a) Structural testing (b) Error guessing technique
(c) Design based testing (d) None of the above | 1 | K1 | CO5 |
| 14. Which Test Document is used to define the Exit Criteria of Testing?
(a) Defect Report (b) Test Summary Report
(c) Test Case (d) Test Plan | 1 | K1 | CO5 |
| 15. In which environment we can perform the Beta testing?
(a) User's and developer's end (b) Developer's end
(c) User's end (d) None of the above | 1 | K1 | CO5 |
| 16. After which phase, we can proceed to the white box testing?
(a) After the coding phase (b) After designing phase
(c) After SRS creation (d) After the installation phase | 1 | K1 | CO5 |
| 17. What are the problems with re-structuring?
(a) Loss of comments (b) Loss of documentation
(c) Heavy computational demands. (d) All of the mentioned | 1 | K1 | CO6 |
| 18. When one does decides to re-engineer a product?
(a) when tools to support restructuring are disabled
(b) when system crashes frequently
(c) when hardware or software support becomes obsolete
(d) subsystems of a larger system require few maintenance | 1 | K1 | CO6 |
| 19. The core of reverse engineering is an activity called
(a) restructure code (b) directionality (c) extract abstractions (d) interactivity | 1 | K1 | CO6 |
| 20. Forward engineering is also known as
(a) extract abstractions (b) renovation
(c) reclamation (d) both renovation and reclamation | 1 | K1 | CO6 |

PART - B (10 × 2 = 20 Marks)

Answer ALL Questions

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| 21. What is Extreme Programming? Give the XP values. | 2 | K1 | CO1 |
| 22. State the characteristics of software. | 2 | K1 | CO1 |
| 23. Compare functional and non-functional requirements. | 2 | K2 | CO2 |
| 24. Show the DFD diagram for ATM. | 2 | K1 | CO2 |
| 25. Compare Aggregate and Composition relationship. Draw the notation. | 2 | K2 | CO3 |
| 26. List the types of actors with example for each. | 2 | K1 | CO3 |
| 27. When to use package diagram? How to represent? | 2 | K1 | CO4 |
| 28. What are the elements of a deployment diagram? | 2 | K1 | CO4 |
| 29. Define the importance of software testing. | 2 | K1 | CO5 |
| 30. Define Refactoring. | 2 | K1 | CO6 |

PART - C (6 × 10 = 60 Marks)

Answer ALL Questions

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| 31. a) Explain the evolutionary process models with suitable diagram. | 10 | K2 | CO1 |
| OR | | | |
| b) Explain the Specialized process models with suitable diagram. | 10 | K2 | CO1 |
| 32. a) What is an SRD? Illustrate an SRD for an online airway reservation system by considering the constraints of your choice. | 10 | K2 | CO2 |
| OR | | | |
| b) Explain the architectural design and styles in brief. | 10 | K2 | CO2 |

33. a) How are classes represented? Mark the Compartments. Construct the detailed class diagram for online ticket reservation system. 10 K3 CO3
OR
b) Construct the interaction diagram for Banking system. 10 K3 CO3
34. a) Explain the GRASP patterns with the problem statement and their solutions. 10 K2 CO4
OR
b) Demonstrate on the Structural and behavioral GoF Pattern in detail. 10 K2 CO4
35. a) Explain any 3 White box testing strategies with relevant examples. 10 K2 CO5
OR
b) Explain any 3 Black box testing strategies with relevant examples. 10 K2 CO5
36. a) Explain the steps involved in software re-engineering. 10 K2 CO6
OR
b) Compare and Contrast Forward and Reverse Engineering. 10 K2 CO6