Question Paper Code	13583

B.E. / B.Tech. - DEGREE EXAMINATIONS, APR / MAY 2025

Fifth Semester

Information Technology

20ITPW502 - OBJECT ORIENTED ANALYSIS AND DESIGN WITH LABORATORY

Regulation - 2020

Duration: 3 Hours　　　　　　　　　　　　　　　　　　　　　　Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)
Answer ALL Questions

	Marks	K-Level	CO
1. Use cases are used to _____. (a) Identify business processes　(b) Identify system goals (c) Describe workflow　(d) Prioritize system procedures	1	K1	CO1
2. The main intent of Business Object Analysis is _____ (a) To build the model　(b) To test the model (c) To understand users' requirements　(d) To design the model	1	K1	CO1
3. Domain model is also called_____ (a) Conceptual model　(b) Package model　(c) Object oriented　(d) Data oriented	1	K1	CO2
4. Refinement is a process of_____ (a) Elaboration　(b) Inception　(c) Construction　(d) Transition	1	K1	CO2
5. A state chart diagram describes_____ (a) attributes of objects　(b) nodes of the system (c) operations executed on a thread　(d) events triggered by an object	1	K1	CO3
6. Which of the following Combines two concurrent activities and re-introduces them to a flow where only one activity can be performed at a time? (a) Join symbol　(b) Fork symbol　(c) Decision symbol　(d) Note symbol	1	K1	CO3
7. What does a component diagram consists of? (a) Components, their Relationship to the environment　(b) Internal structure (c) Packages and dependency (d) Internal structure, Components & their Relationship to the environment	1	K1	CO4
8. What is the purpose of a package diagram? (a) To represent the physical implementation of a system (b) To depict interactions between objects (c) To organize model elements into groups (d) To define data flows within a system	1	K1	CO4
9. In a real-time traffic monitoring system, which GRASP pattern would be suitable for managing traffic flow? (a) Information Expert　(b) Creator　(c) Low Coupling　(d) Controller	1	K1	CO5
10. A software company is developing a new e-commerce platform. Which type of testing would be most appropriate to ensure that the system meets the business requirements and user expectations? (a) Integration　(b) Unit　(c) Acceptance　(d) Performance	1	K1	CO6

PART - B (12 × 2 = 24 Marks)
Answer ALL Questions

	Marks	K-Level	CO
11. Give the importance of RUP.	2	K2	CO1
12. Compare Include and Extend use case relationships.	2	K2	CO1
13. Differentiate aggregation and composition.	2	K2	CO2
14. State how domain model termed as visual dictionary.	2	K2	CO2
15. Illustrate Event, State and Transition.	2	K2	CO3

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create　　　**13583**

16. State swimlane.	2	K2	CO3
17. Explain Package and mention the three layers of the package diagram.	2	K2	CO4
18. Identify the use of UML Package Diagrams.	2	K2	CO4
19. Write the steps for mapping design to code.	2	K2	CO5
20. Analyze the benefits of Low coupling.	2	K2	CO5
21. Write the test cases for validating user name and password.	2	K2	CO6
22. Illustrate Integration testing.	2	K2	CO6

PART - C (6 × 11 = 66 Marks)
Answer ALL Questions

23.	a)	Explain with an example, how Use Case Modeling is used to describe the functional requirements. Identify the actors, scenario and Use Case for the ATM system.	11	K2	CO1
		OR			
	b)	Explain a Problem statement for Library Management system. Draw the UML use case, Activity, Class, Sequence, State chart, Package, Component and Deployment diagram.	11	K2	CO1
24.	a)	Explain Domain Model and illustrate the same with Point of Sale system.	11	K2	CO2
		OR			
	b)	Evaluate and explain how to design a class diagram for passport automation system. Give all possible representation in a class (such as: name, attribute, visibility, methods, and responsibilities)	11	K2	CO2
25.	a)	Explain the following notations in sequence diagram with an example, (i) Object destruction (ii) Frames (iii) Conditional message (iv) Mutually exclusive conditional message (v) Iterations over a collection	11	K2	CO3
		OR			
	b)	Explain the following UML diagrams for the Online Shopping system, i) Sequence diagram ii) Activity diagram iii) State machine diagram	11	K2	CO3
26	a)	A large-scale enterprise resource planning (ERP) system for a multinational company. The system includes modules for finance, human resources, sales, procurement, and logistics, with a large number of developers working on different parts of the system. At what stage in the software development process would you recommend using UML Package Diagrams? Justify your answer.	11	K2	CO4
		OR			
	b)	Describe in detail about logical architecture and UML package diagram.	11	K2	CO4
27.	a)	Explain in detail about GOF Design pattern.	11	K2	CO5
		OR			
	b)	Examine in detail the GRASP method for designing objects with example.	11	K2	CO5
28.	a)	Explain in detail about Developing Test Cases and Test Plans with relevant example.	11	K2	CO6
		OR			
	b)	Discuss in detail about various object oriented testing strategies.	11	K2	CO6

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

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