Reg. No.															

Question Paper Code	13303

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2024

Fifth Semester

Information Technology

20ITPW502 - OBJECT ORIENTED ANALYSIS AND DESIGN WITH LABORATORY

Regulations - 2020

Duration: 3 Hours Max. Marks: 100

PART - A (MCQ) (20 × 1 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	The essential characteristics of an object that distinguish it from all other kinds of objects and thus provide crisply defined conceptual boundaries, relative to the perspective of the viewer_____ (a) Encapsulation (b) Modularity (c) Hierarchy (d) Abstraction	1	K1	CO1
2.	Which of the following are the valid relationships in Use Case Diagrams? (a) Generalization (b) Include (c) Extend (d) All of the mentioned	1	K1	CO1
3.	What is an object? (a) An object is an instance of a class (b) An object includes encapsulation of data (c) An object is not an instance of a class (d) All of the mentioned	1	K1	CO1
4.	The method of design encompassing the process of object oriented decomposition and a notation for depicting both logical and physical and as well as static and dynamic models of the system under design is known as: (a) Object- Oriented Programming (b) Object- Oriented Design (c) Object- Oriented Analysis (d) None of the mentioned	1	K1	CO2
5.	What type of core-relationship is represented by the symbol in the figure below?  (a) Aggregation (b) Dependency (c) Generalization (d) Association	1	K1	CO2
6.	Cohesion and coupling are represented by using (a) structure part (b) structure effect (c) dependence matrix (d) all of these	1	K1	CO2
7.	What is a class diagram? (a) A diagram used to model the interactions between users and the system (b) A diagram used to model the classes and their relationships in the system (c) A diagram used to model the flow of activities in the system (d) None of the above	1	K1	CO3
8.	Association in a class diagram indicates (a) A relationship between classes (b) A relationship between objects (c) A relationship between methods (d) None of the above	1	K1	CO3
9.	collaboration diagram define (a) A diagram that represents the interactions between actors and the system (b) A diagram that represents the relationships between classes (c) A diagram that represents the interactions between objects and their relationships (d) None of the above	1	K1	CO3
10.	Sequence diagram is belonging to same type of diagrams as? (a) Communication Diagram (b) Timing Diagram (c) both Communication Diagram and Timing Diagram (d) Class Diagram	1	K1	CO4
11.	_____kind of message that denotes an invocation of operation of target lifeline is called. (a) Call message (b) Return Message (c) Self Message (d) Recursive Message	1	K1	CO4

12.	What is the primary purpose of a package diagram in UML? (a) To show the dynamic behavior of the system (b) To depict the physical components of the system (c) To group related classes into packages (d) To model the data flow in the system	*1*	*K1*	*CO4*
13.	Coupling states that (a) The degree to which two classes are related to each other (b) The degree to which two classes are independent of each other (c) The degree to which two classes share a common interface (d) None of the above	*1*	*K1*	*CO5*
14.	Design pattern is used to create objects without specifying the exact class to create? (a) Abstract Factory (b) Builder (c) Factory Method (d) Prototype	*1*	*K1*	*CO5*
15.	Which of the following is true about design patterns? (a) Design patterns represent the best practices used by experienced object-oriented software developers (b) Design patterns are solutions to general problems that software developers faced during software development (c) Design patterns are obtained by trial and error by numerous software developers over quite a substantial period of time (d) All of the above	*1*	*K1*	*CO5*
16.	What is the use of the Builder Pattern? (a) It simplifies the creation of complex objects by breaking the creation process into steps (b) It allows an object to alter its behaviour when it's internal state changes (c) It ensures a class has only one instance and provides a global point of access to it (d) It helps in hiding the complexities of the system and provides an interface to the client	*1*	*K1*	*CO5*
17.	What is Six Sigma? (a) It is the most widely used strategy for statistical quality assurance (b) The "Six Sigma" refers to six standard deviations (c) It is the most widely used strategy for statistical quality assurance AND The "Six Sigma" refers to six standard deviations (d) A Formal Technical Review(FTR) guideline for quality walkthrough or inspection	*1*	*K1*	*CO6*
18.	Which of the following is not part of the Test document? (a) Test Case (b) Requirements Traceability Matrix [RTM] (c) Test strategy (d) Project Initiation Note [PIN]	*1*	*K1*	*CO6*
19.	Who identifies, documents, and verifies that corrections have been made to the software? (a) Project manager (b) Project team (c) SQA group (d) All of the mentioned	*1*	*K1*	*CO6*
20.	Which of the following is not a SQA plan for a project? (a) evaluations to be performed (b) amount of technical work (c) audits and reviews to be performed (d) documents to be produced by the SQA group	*1*	*K1*	*CO6*

PART - B (10 × 2 = 20 Marks)

Answer ALL Questions

21.	Define Unified Process.	*2*	*K1*	*CO1*
22.	Give the different formats of use case.	*2*	*K1*	*CO1*
23.	Illustrate the concept of elaboration.	*2*	*K2*	*CO2*
24.	Differentiate between Composition and Aggregation.	*2*	*K2*	*CO2*
25.	List the common notations in Interaction diagram.	*2*	*K1*	*CO3*
26.	Distinguish between coupling and cohesion.	*2*	*K2*	*CO3*
27.	What is Observer pattern?	*2*	*K1*	*CO4*
28.	Give steps involved in mapping design to code.	*2*	*K1*	*CO4*

29.		Define test case.	*2*	*K1*	*CO5*
30.		Describe the steps needed to create test plan.	*2*	*K1*	*CO6*

PART - C (6 × 10 = 60 Marks)

Answer ALL Questions

31.	a)	Explain unified process in OOAD. Explain the phases with suitable diagrams.	*10*	*K1*	*CO1*
		OR			
	b) i)	Explain fully dressed use case with an example.	*5*	*K2*	*CO1*
	ii)	Explain the guidelines for writing and finding use case.	*5*	*K2*	*CO1*
32.	a)	Describe the strategies used to identify conceptual class. Describe the steps to create domain model for representing conceptual classes.	*10*	*K2*	*CO2*
		OR			
	b) i)	Explain in detail about domain model Refinement.	*5*	*K2*	*CO2*
	ii)	Write short notes on Multiplicity.	*5*	*K2*	*CO2*
33.	a)	Discuss about UML component and deployment diagram with an example.	*10*	*K2*	*CO3*
		OR			
	b)	State SSD and create SSD for Library management System.	*10*	*K2*	*CO3*
34.	a)	Describe GRASP and explain in detail about controller and Low coupling patterns.	*10*	*K2*	*CO4*
		OR			
	b)	Explain in detail about controller and Bridge pattern.	*10*	*K2*	*CO4*
35.	a)	Discuss about Various OO methodologies.	*10*	*K2*	*CO5*
		OR			
	b)	Illustrate SQA and discuss the various activities involved in SQA in detail.	*10*	*K2*	*CO5*
36.	a)	Develop Use case and Activity Diagram for activities involved in ordering a food in a restaurant from the point when the customer enters a restaurant to the point when leaving the restaurant.	*10*	*K2*	*CO6*
		OR			
	b)	Model a Class diagram for Library Management System and State the functional requirements and activities.	*10*	*K2*	*CO6*