

Total No. of Questions: 6

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Enrollment No.....



Faculty of Engineering
End Sem (Even) Examination May-2022
CS3CO15 / IT3CO14

Object Oriented Analysis & Design

Programme: B.Tech.

Branch/Specialisation: CSE / IT

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. Models are useful because they: **1**
(a) Simplify reality
(b) Help understanding complex systems
(c) Act as templates of system
(d) All of these
- ii. The approach in RUP is known to be: **1**
(a) Activity driven (b) Technology driven
(c) Usecase driven (d) Planning driven
- iii. A relation between classes as whole part such that part is destroyed when whole ends execution is called as: **1**
(a) Aggregation (b) Composition
(c) Hierarchy (d) Association
- iv. CRC Cards are acronyms for: **1**
(a) Class, Responsibility, Collaborations
(b) Class, Relations, Connections
(c) Connections, Relations, Collaborations
(d) Class, Responsibility, Connections
- v. A guard condition in state diagram is- **1**
(a) A boolean expression (b) State of an object
(c) Event description (d) Transition name
- vi. Aggregation is _____. **1**
(a) Set of relationship (b) Composed of relationship
(c) Part of relationship (d) All of these

P.T.O.

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	vii.	Logical Components are-	1
		(a) Middleware components	
		(b) Business and process components	
		(c) Physically deployed components	
		(d) Service components	
	viii.	Grouping of elements to provide service is termed as-	1
		(a) Subsystem (b) Package	
		(c) Class (d) Component	
	ix.	What answers “are we building a right product?”	1
		(a) Verification (b) Validation	
		(c) Testing (d) Performance	
	x.	Re-engineering does not include-	1
		(a) Re-implementing legacy system	
		(b) Re-documenting legacy systems	
		(c) Re-architecting legacy systems	
		(d) Re-structuring legacy systems	
Q.2	i.	Differentiate the terms object-oriented analysis and object-oriented design.	2
	ii.	Define iterations and its importance in software development.	3
	iii.	Elaborate on the 4+1 architectural views of RUP.	5
OR	iv.	Clearly enumerate and explain the distinguished object-oriented characteristics.	5
Q.3	i.	How to identify potential classes in any software system?	2
	ii.	Explain the various types of relationship amongst classes taking suitable example for each.	8
OR	iii.	Draw a systematic use case diagram to shop from an online portal like amazon. Use basic functionalities to sign up, login, add items to cart, pay through various payment options and so on. Assume all conditions of authentication and online ordering system. You may create a scenario as a sample problem statement to clearly define functional requirements.	8
Q.4	i.	Describe various elements of a state diagram.	3

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	ii.	Simulate in Activity Diagram a situation for Students who wish to take admission in Medi-caps University. The system begins when students passing their qualifying exam register into the system. Upon verification of valid documents and allotment of vacant seats (out of total seats in a branch) for a discipline, the student is enrolled in a class. The system ends with generation of enrollment number of the student. Assume all fields necessary for registering in the system on your own.	7
OR	iii.	Draw a sequence diagram for the following scenario - Getting on a flight. Start at home, check in at the counter, go through security, and end up at the gate. (If you have time during the exercise, get yourself to your seat.)	7
Q.5	i.	Explain deployment diagram in detail.	4
	ii.	Explain any two types of structural, behavioral and creational patterns each.	6
OR	iii.	What are component diagrams and how are they associated with interfaces?	6
Q.6		Write short notes on any two:	
	i.	Reengineering and reverse engineering concepts	5
	ii.	Quality and its classification	5
	iii.	V Model for testing	5

Marking Scheme

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Q.1	i.	Models are useful because they: (d) All of these	1	OR	iii.	Draw a systematic use case diagram As per the explanation		8					
	ii.	The approach in RUP is known to be: (c) Usecase driven	1		Q.4	i.	Elements of a state diagram.		3				
	iii.	A relation between classes as whole part such that part is destroyed when whole ends execution is called as: (b) Composition	1			ii.	Assume all fields necessary for registering in the system on your own. As per the explanation		7				
	iv.	CRC Cards are acronyms for: (a) Class, Responsibility, Collaborations	1			OR	iii.	Draw a sequence diagram for the following scenario As per the explanation		7			
	v.	A guard condition in state diagram is- (a) A boolean expression	1				Q.5	i.	Deployment diagram Description Diagram	2 marks 2 marks	4		
	vi.	Aggregation is _____. (c) Part of relationship	1					ii.	Any two types of structural Behavioral Creational patterns	2 marks 2 marks 2 marks	6		
	vii.	Logical Components are- (b) Business and process components	1					OR	iii.	Component diagrams and association with interfaces 2 marks for each	(2 marks * 3)	6	
	viii.	Grouping of elements to provide service is termed as- (a) Subsystem	1						Q.6		Write short notes on any two:		
	ix.	What answers “are we building a right product?” (b) Validation	1							i.	Reengineering and reverse engineering concepts Definition Differences Importance	2 marks 2 marks 1 mark	5
	x.	Re-engineering does not include- (c) Re-architecting legacy systems	1							ii.	Quality Definition Its classification	2 marks 3 marks	5
			iii.	V Model for testing Diagram						2 marks 3 marks			
Q.2	i.	Difference b/w object-oriented analysis and object-oriented design As per the explanation	2										
	ii.	Define iterations and its importance in software development. As per the explanation	3										
OR	iii.	4+1 architectural views of RUP. Diagram Description	5										
	iv.	Distinguished object-oriented characteristics 1 mark for each characteristic	5										
Q.3	i.	Any four potential classes in any software system 0.5 mark for each	2										
	ii.	Types of relationship amongst classes	8										