

Enrollment No.....



Faculty of Science

End Sem (Odd) Examination Dec-2019

CA3EL07 Object Oriented Analysis and Design

Programme: BCA

Branch/Specialisation: Computer
Application

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. The first version of UML was: **1**
(a) UML 0.8 (b) UML 1.0 (c) UML 1.4 (d) UML 2.0
- ii. Code is developed in which one of the following phases: **1**
(a) Inception phase (b) Elaboration phase
(c) Construction phase (d) Transition phase
- iii. In UML diagrams, relationship between object and component parts is represented by **1**
(a) Ordination (b) Aggregation
(c) Segregation (d) Increment
- iv. Which of the following UML diagrams has a static view? **1**
(a) Collaboration (b) Use-case
(c) State-chart (d) Activity
- v. Interaction Diagram is a combined term for **1**
(a) Sequence Diagram + Collaboration Diagram
(b) Activity Diagram + State Chart Diagram
(c) Deployment Diagram + Collaboration Diagram
(d) None of these
- vi. Which of the following diagram is time oriented? **1**
(a) Collaboration (b) Sequence
(c) Activity (d) Deployment
- vii. _____ is a measure of the degree of interdependence between modules. **1**
(a) Cohesion (b) Coupling (c) Visibility (d) Controllability
- viii. Which of the following is/are design pattern(s)? **1**
(a) Adapter (b) Singleton (c) Observer (d) All of these

P.T.O.

- ix. Which of the following will not appear in the Component Diagram for Library Management System? **1**
(a) Book (b) Transaction
(c) Librarian (d) Member
- x. Replenishing cash into the ATM comes under the use case of: **1**
(a) Repair (b) Maintenance
(c) Authentication (d) Transaction
- Q.2 i. What is a unified process? **2**
ii. Explain the Inception phase of software development. **3**
iii. Explain the different classification of UML diagrams. **5**
- OR iv. What do you understand by Use Case modelling? **5**
- Q.3 i. What do we do in the Elaboration Process? **2**
ii. Identify different vocabulary of leave management system. Using these terms identify different classes, their data members & operations of leave management system. **8**
- OR iii. Define aggregation and composition. Using proper example bring out difference between the two. Mention different symbols used for aggregation & composition. **8**
- Q.4 i. Why do we need to model class diagrams in UML? **3**
ii. What is a sequence diagram? Explain the four steps to model a sequence diagram with example. **7**
- OR iii. Activity diagrams address the dynamic view of a system. How? **7**
- Q.5 i. What are Design Patterns? How have these been classified? **4**
ii. Clearly describe Factory Patterns and Abstract Factory Patterns. **6**
- OR iii. Define 'Coupling' and 'Cohesion'. Which one should be kept low and which one high and why, while designing? **6**
- Q.6 Draw use case and activity diagram for any two of the following: **5**
i. Traffic management **5**
ii. ATM Machine **5**
iii. Library management System **5**

Marking Scheme
CA3EL07 Object Oriented Analysis and Design

Q.1	i.	The first version of UML was:	1
		(a) UML 0.8	
	ii.	Code is developed in which one of the following phases:	1
		(c) Construction phase	
	iii.	In UML diagrams, relationship between object and component parts is represented by	1
		(b) Aggregation	
	iv.	Which of the following UML diagrams has a static view?	1
		(b) Use-case	
	v.	Interaction Diagram is a combined term for	1
		(a) Sequence Diagram + Collaboration Diagram	
Q.2	vi.	Which of the following diagram is time oriented?	1
		(b) Sequence	
	vii.	_____ is a measure of the degree of interdependence between modules.	1
		(b) Coupling	
	viii.	Which of the following is/are design pattern(s)?	1
		(d) All of these	
	ix.	Which of the following will not appear in the Component Diagram for Library Management System?	1
		(d) Member	
	x.	Replenishing cash into the ATM comes under the use case of:	1
		(b) Maintenance	
Q.3	i.	Definition of unified process	2
	ii.	Inception phase of software development	3
		Definition	1 mark
		Input artifacts	1 mark
		Deliverable	1 mark
	iii.	Two classification of UML diagrams.	5
		2.5 marks for each	(2.5 marks * 2)
	OR iv.	Definition of Use Case modelling	5
		Need	3 marks

OR	iii.	Identifying classes	2 marks	8
		Their data members	2 marks	
		Operations of leave management system	2 marks	
		Definition of aggregation	2 marks	
		Definition of composition	2 marks	
		Examples	2 marks	
		Symbols used	2 marks	
Q.4	i.	Need of class diagrams	2 marks	3
		Definition of class diagram	1 mark	
		Definition of sequence diagram	3 marks	
		Four steps to model a sequence diagram with example		
		1 mark for each step (1 mark * 4)	4 marks	
		Definition of Activity diagrams	2 marks	
		Need of activity diagram	3 marks	
		Example	2 marks	
OR	iii.	Definition of Design Patterns	2 marks	4
		Classification	2 marks	
		Factory Patterns	3 marks	
		Abstract Factory Patterns	3 marks	
		Definition of 'Coupling' and 'Cohesion'	4 marks	
		Reason for low and high	2 marks	
Q.6	i.	Use case and activity diagram for any two of the following:		5
		Traffic management		
		Use case	2 marks	
		Activity diagram	3 marks	
		ATM Machine		
		Use case	2 marks	
		Activity diagram	3 marks	
		Library management System		
		Use case	2 marks	
		Activity diagram	3 marks	
