Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem (Even) Examination May-2022

CB3CO08 Software Design with UML

Programme: B.Tech. Branch/Specialisation: CSBS

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. Which of these abstractions class consist of? **1**

(a) Set of the objects (b) Operations

(c) Attributes (d) All of these

ii. _____are part of the class operation specification format. **1**

(a) Name (b) Parameter list

(c) Return-type list (d) All of these

iii. Use case description consists of the following… **1**

(a) Actors (b) Number and Use case name

(c) Need and stakeholder (d) All of these

iv. To hide the internal implementation of an object we use … **1**

(a) Inheritance (b) Encapsulation

(c) Polymorphism (d) None of these

v. CRC approach and noun phrase approach are used to identify … **1**

(a) Classes (b) Collaborators

(c) Use cases (d) Object

vi. To distinguish between active and non-active object which property is applied? **1**

(a) Abstraction (b) Polymophism

(c) Concurrency (d) Aggregation

vii. Cohesion and coupling are represented by using … **1**

(a) Structure part (b) Structure effect

(c) Dependence matrix (d) All of these

P.T.O.

viii. which diagram that helps to show Dynamic aspects related to a system? **1**

(a) Sequence (b) Interaction

(c) Deployment (d) Use case

ix. The interfaces in component diagrams are linked using which of the following? **1**

(a) Connectors (b) Interfaces

(c) Components (d) None of these

x. which diagrams are used to distribute files, libraries, and tables across topology of the hardware? **1**

(a) Deployment (b) Use case

(c) Sequence (d) Collaboration

Q.2 i. State advantages of spiral model. **2**

ii. What is a nature of class and object? How to identify classes and objects with suitable examples **3**

iii. Describe basic characteristics of object-oriented analysis process. **5**

OR iv. Describe basic characteristics of the structure analysis model. **5**

Q.3 i. What is the importance of modelling in object-oriented environment? **2**

ii. Identify actors and use cases for the online airline reservation systems. **8**

OR iii. What are the four basic relationships defined in UML? Give suitable examples for usage of each type of relationships? **8**

Q.4 i. Draw a class diagram for online railway reservation system with analysis. **3**

ii. Draw UML collaboration diagram for student management system. **7**

OR iii. Develop DFD and sequence diagram for home safe security system. **7**

Q.5 i. Discuss the significance of state chart diagrams in modelling a system. **4**

ii. Prepare an activity diagram that elaborates the details of logging into an email system. Explain the steps with a neat diagram. **6**

OR iii. Explain about forking and joining concepts in activity diagram with an example. **6**

Q.6 Attempt any two:

i. What is meant by a deployment diagram? Discuss common modelling techniques of it? **5**

ii. Differentiate between signals and events by taking suitable examples. **5**

iii. Define component. What are the differences between components and classes? How are component and interface related? **5**

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Marking Scheme
CB3CO08 Software Design with UML

Q.1	i.	Which of these abstractions class consist of? (d) All of these	**1**
	ii.	_____are part of the class operation specification format. (d) All of these	**1**
	iii.	Use case description consists of the following… (d) All of these	**1**
	iv.	To hide the internal implementation of an object we use … (b) Encapsulation	**1**
	v.	CRC approach and noun phrase approach are used to identify … (a) Classes	**1**
	vi.	To distinguish between active and non-active object which property is applied? (c) Concurrency	**1**
	vii.	Cohesion and coupling are represented by using … (c) Dependence matrix	**1**
	viii.	which diagram that helps to show Dynamic aspects related to a system? (a) Sequence (b) Interaction	**1**
	ix.	The interfaces in component diagrams are linked using which of the following? (a) Connectors	**1**
	x.	which diagrams are used to distribute files, libraries, and tables across topology of the hardware? (a) Deployment	**1**

Q.2	i.	Advantages of spiral model	2 marks	**2**
	ii.	Nature of class and object	1 mark	**3**
		Identify classes and objects	2 marks	
	iii.	Any five characteristics of object-oriented analysis process (1 mark * 5)	5 marks	**5**
OR	iv.	Any five characteristics of the structure analysis model (1 mark * 5)	5 marks	**5**

Q.3	i.	Importance of modelling		2 marks	**2**
	ii.	As per Diagram		8 marks	**8**
OR	iii.	Any four relationships	(1 mark * 4)	4 marks	**8**
		Suitable examples for each	(1 mark * 4)	4 marks	
Q.4	i.	As per Diagram		3 marks	**3**
	ii.	As per Diagram		7 marks	**7**
OR	iii.	As per Diagram		7 marks	**7**
Q.5	i.	Any four significance	(1 mark * 4)	4 marks	**4**
	ii.	As per Diagram		4 marks	**6**
		Explanation		2 marks	
OR	iii.	Forking concepts		2 marks	**6**
		Joining concepts		2 marks	
		Example		2 marks	
Q.6		Attempt any two:			
	i.	Deployment diagram		3 marks	**5**
		Common modelling techniques		2 marks	
	ii.	Any five differences	(1 mark * 5)	5 marks	**5**
	iii.	Component definition		2 marks	**5**
		Differences		2 marks	
		Relation		1 marks	

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