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PES University, Bangalore

(Established under Karnataka Act No. 16 of 2013)

UC16MC552

MAY 2018: END SEMESTER ASSESSMENT (ESA) MCA IV SEMESTER

UC16MC552- OBJECT ORIENTED MODELING AND DESIGN

Time: 3 Hrs | Answer All Questions | Max Marks: 100

1.	a)	Construct a class diagram for the below mentioned classes using aggregation and composition relationship and specify the multiplicities and multiple instances that a class object participate in same associatiation. Classes:- College, Department, University, student and faculty	4
	b)	Describe N-ary association and its conversion to binary form with an example diagram.	8
	c)	Explain the following briefly with an example each. (i) Association Classes (ii) Qualified Associations	4+4
2.	a)	What makes the pattern? Discuss different categories of pattern briefly.	4
	b)	Discuss multiple inheritance among disjoint classes and overlapping classes with an example each.	6
	c)	Consider Car as an example object and illustrate the aggregation concurrency in state diagram.	10
3.	a)	Consider a physical bookstore in a shopping mall. (i). List three actors that are involved in the design of a checkout system and give a brief description of each actor. (ii) Consider the scenario of purchase of items. Taking the perspective of the customer, list another use case at a comparable level of abstraction. Summarize the purpose of use case with a sentence. (iii) Prepare the use case diagram for a physical bookstore checkout system.	3+2+5
	b)	Scenario: Order food online through foodpanda India App. 50% off on your first order. Use the voucher code FP50. If your location exceeds 10kms from the restaurants extra charges applies. Select your menu based on offers or combo. Draw an activity diagram which depicts the above scenario.	6
	c)	Bring out the context where Forward-Receiver design pattern can be applicable and draw the general structure of Forward-Receiver design pattern.	4
4.	a)	Discuss the different ways to find new system concepts?	5
	b)	List and explain the steps to construct application class model.	1+8
	c)	Discuss the variants and consequences of client-dispatcher design pattern.	6
5.	a)	Draw an architectural diagram of ATM system	4
	b)	Explain the decision making on breaking the system into subsystem during system design with an example block diagram.	8
	c)	Discuss the steps "Rearrange classes and operations to increase inheritance" which is followed to 'Adjust the definitions' of classes and operations during class design.	8