PES University, Bangalore

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UC15MC601

DECEMBER 2017: END SEMESTER ASSESSMENT (ESA) MCA V SEMESTER

UC15MC601- OBJECT ORIENTED MODELING AND DESIGN

Time: 3 Hrs	Answer All Questions	Max Marks: 100

1.	a)	Define Model. Briefly discuss the purpose of building a model.	3
	b)	Several classes shown in figure have attributes that are really references to other classes and could be replaced with associations. A person may have up to three companies as employers. Each person has an ID. A car is assigned an ID. Cars may be owned by persons, companies, or banks. Owner ID refers to the ID of the person, company or bank who owns the car. A car loan may be involved in the purchase of a car. Prepare a class diagram without IDs and using association and generalization. Try to assign multiplicities and if required you may add one or more classes of your own. 	10
	c)	Compare the class models from the given figure. The left model fig(a) represents Subscription as an association class; the right model fig(b) treats Subscription as an ordinary class. A person may have multiple magazine subscriptions. A magazine has multiple subscribers. For each subscription, it is important to track the date and amount of each payment as well as the current expiration date. For above case which is the better model and justify your answer. 	7

2.	a)	Define Pattern. What are the different categories of pattern?	3
	b)	Discuss multiple classification in class model and explain how object orientation handles the multiple classification, with example.	7
	c)	Illustrate different approaches of demonstrating one-shot state diagram with suitable example.	10

3.	a)	A customer book a BDA approved plot through 99acres.com by submitting aadhar documents and booking advance amount. The application allows the user to choose his/her choice of location, dimension, facing etc. with loan facility (if required) from any nationalized bank. Determine the major interactions from the given application and prepare a sequence diagram.	8
	b)	"As an Industrial Facilities Manager, Clara is responsible for maintaining production systems and sustainability, which includes keeping equipment functional. She needs quick access to maintenance information and parts supply for her department's inventory." (i)Notice that the user story identifies who the user is, what she needs, and why she needs it. (ii) Draw a usecase diagram for the given user story.	8
	c)	Briefly discuss branching and concurrency in activity diagram.	4

4.	a)	Explain in detail "finding classes and keeping the right classes in domain class model with an ATM example.	10
	b)	Describe the structure of Forwarder Receiver design pattern with neat OMT diagram and CRC cards.	10

5.	a)	Discuss the decision making done on reuse plan during the system design.	6
	b)	How to achieve improvement in organizing the class design? Discuss briefly.	6
	c)	Describe the intention and motivation of Façade pattern with a Home Theater system as an example.	8