

# CS 3009: Software Engineering (B)

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## Quiz 5

Time: 15 minutes

Max Marks: 20

Roll No.          Solution         

### Q1.

10 Marks

Mark each statement as True or False. **Circle** the letter T if the statement is true, circle the letter F if the statement is false. Unclear answers will not be given any credit.

1. Architecture of every software system is developed using exactly one architecture style. T / **F**
2. A reference model is just another name of functional decomposition. T / **F**
3. Swimlane diagram is more suitable when we have single participant in a scenario as compared to the scenario where more than one participants are involved. T / **F**
4. CRC cards can be used as an input to the process of developing a class diagram. **T** / F
5. CRC in CRC cards during engineering of software is an abbreviation for Cyclic Redundancy Check. T / **F**
6. Prototyping can be used as a requirements elaboration tool. **T** / F
7. The maximum number of rules in a binary decision table are  $n^2$ . T / **F**
8. <<include>> in a use case diagram is used to model a use case which is shared by two or more use cases. **T** / F
9. An ER diagram should be used to model requirements related to the problem domain entities that are required to be stored in a permanent storage (or database). **T** / F
10. A use case diagram is a flow oriented model and models the flow of user actions. T / **F**

### Q2.

10 Marks

We are an e-shopping site that offers up to 50% discount to our customers. The site asks the visitors to play two games and avail discount. The visitors are asked if they want to play the games before they start shopping. If they choose 'No', they will either get discount through an existing (unavailed) discount voucher (which is always 15% discount) or they get no discount at all. If they choose 'Yes' their scores are used to calculate the discount and they cannot use the discount vouchers. To calculate the discount the site uses the following business rules:

1. If a customer scores 50 or above in Game 1 and Game 2, give 50% discount and issue a discount voucher for future shopping
2. If a customer scores less than 50 in one of the games only, give 40% discount
3. If a customer scores less than 50 in both of them and is a registered member, give 10% discount and issue a discount voucher for future shopping
4. If a customer scores less than 50 in both of them and is not a registered member, give 10% discount

**To do:** Provide a complete decision table that models the information provided above. Use the notation discussed in class. **Hint:** Mention each action and condition separately.

		Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7
Conditions	Willingness to play the games?	F	F	T	T	T	T	T
	Score <sub>Game1</sub> >= 50	-	-	F	F	F	T	T
	Score <sub>Game2</sub> >= 50	-	-	F	F	T	F	T
	Is a registered customer?	-	-	F	T	-	-	-
	Existing un-availed discount voucher used?	F	T	-		-	-	-
Actions	Award 0 % discount	x						
	Award 10 % discount			x	x			
	Award 15 % discount		x					
	Award 40 % discount					x	x	
	Award 50 % discount							x
	Issue one discount voucher for future shopping				x			x