2018 Fall CS 160 Midterm Exam

Name_____

True/False (5 points)

1. _T___ 2 main categories of software development processes are plan-driven and agile.
2. __F__ Waterfall model responds to requirement changes appropriately.
3. __F__ Agile methods are preferred over plan-driven methods.
4. __T_ A user story is a requirement expressed as scenario.
5. __T__Agile methods seem to work best when team members have a relatively high skill level.
6. __T__ Functional requirements capture the intended behavior of the system.
7. __T__ Consider the following requirement specification fragment for a ticket-issuing system "Once a destination has been selected, users are requested to input their credit card. Its validity is checked and the user is then requested to input a personal identifier. When the credit transaction has been validated, the ticket is issued." This is a functional requirement.
8. __T__ Consider the following requirement specification fragment for a ticket-issuing system "Between 0600 and 2300 in any one day, the recovery time after a system failure should not exceed 2 minutes". This is an availability requirement.
9. ___F_ The output of Feasibility study phase in the requirements engineering process is a project plan.
10. __T__ It is relatively common for different customers to propose conflicting requirements, each arguing that his or her version is the right one.

Multiple Choice Questions(5 points)

1. Which of the following is NOT an advantage of using incremental development and delivery?

[A] More extensive testing of critical customer functionality
[B] Early delivery of critical functionality to customer
[C] Lower risk of overall project failure
[D] Early increments serve as prototypes to explore requirements
[E] Systems are often have good structures

2. The practices pair programming, collective ownership of the system code, and sustainable pace in Extreme Programming fit into which principle of agile methods?

[A] People not process
[B] Incremental delivery
[C] Maintain simplicity
[D] Embrace change

3. Who chooses the stories for inclusion in the next release based on their priorities and the schedule estimates?

[A] Customer
[B] Developer
[C] Tester
[D] Project Manager

4. Which of the following does not apply to agility to a software process?
[A]Uses incremental product delivery strategy
[B]Only essential work products are produced
[C] Eliminate the use of project planning and testing
[D] All of the mentioned

5. Which of the following pattern is the basis of interaction management in many web-based systems?
[A] architecture [B] repository pattern
[C]model-view-controller [D]different operating system

6. In use case diagram, if a base use case happen, a dependent use case always happen, what is the relationship between the base use case and dependent use case?
[A] include [B] extended [C] generalization

7. Read the following description. “Customers of the garage can buy cars. Customers with a bad credit should pay an extra down payment”. Which of the following diagrams represent this description?

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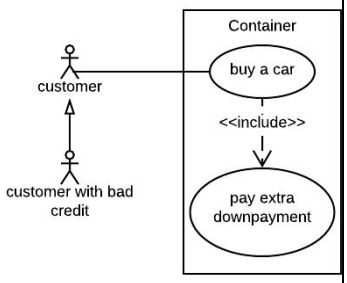
<td> 
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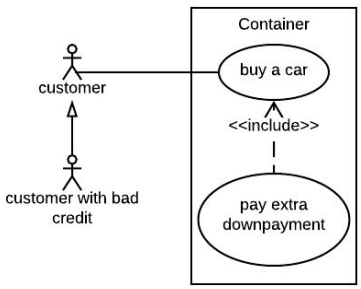
<td> 
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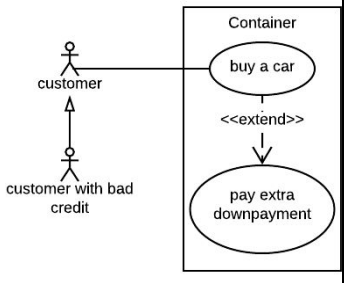
<td> 
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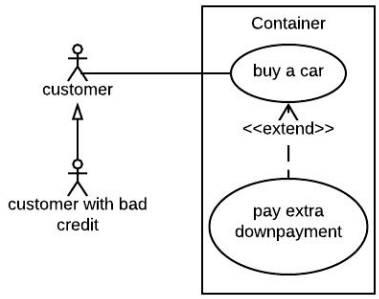
<td> 
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8. Which of the following view shows that the system is composed of interacting processes at run time?

[A] physical [B] development [C] logical [D] process

9. Which of the following distinguishes peer-to-peer networks from client/server networks?

[A] In peer-to-peer networks, only one computer can send and receive transmissions on the network.

[B] In peer-to-peer networks, only one type of protocol suite can be used to send and receive data.

[C] In peer-to-peer networks, a central computer manages all file and print sharing.

[D] In peer-to-peer networks, no single computer has more authority than another, by default.

10. Which view in the 4+1 architecture view depicts how users interact with the system and how the specific sequences of inputs and outputs occur during software operation.

[A] logical view [B] development view [C] process view [D] physical view [E]Scenario

Diagram Modelling(2.5points)

1. Draw a class diagram (with attributes, where appropriate) that describes entities and relationship relevant to the below scenario. Students are members of teams. Each team has 2 or 3 members. Each team completes 0 to 3 assignments. Each student takes exactly one midterm test. Computer Science students have a single account on NCS facility, while each engineering student has an account on the ENGR facility. Each assignment and midterm is assigned a grade.(1 points)

One mistake would deduct 0.25point. If you are wrong on more than four places (incorrect symbol notification or missing classes), including four places, one point would be deducted. If you give less than four classes, one point would be deducted. Note that duplicate errors would not be counted repeatedly. For example, if you mistakenly mark a relationship "aggregation" as "navigability" more than twice, than only one time would be counted.

2. Draw the use case diagrams for your assignment project. Please include your project name.(1.5points)

Grading this question is easy to tend to be subjective, so only technical errores would be checked. It would be graded by the same rule as question 1.

Description Questions(2.5points)

1. Giving reasons for your answer based on the type of system being developed, suggest the most appropriate generic software process model that might be used as a basis for managing the development of the following systems:

   a. A system to control anti-lock braking in a car
   b. A virtual reality system to support software maintenance
   c. A university accounting system that replaces an existing system
   d. An interactive travel planning system that helps users plan journeys with the lowest environmental impact

(1.5points)

Each question is 0.25 points. If you give the right answer but fail to give reasoning part then 0.05 points would be deducted; the same that if you are reasoning well and very close to the right answer.

2. What is User Requirements?(1 points)

You get the point as long as you point out user requirements contain functional and non-functional requirements.