CSE 400 Midterm

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I. QUESTION (20 POINTS)

Draw a use case diagram for a ticket distributor for a train system. The system includes two actors: a traveler who purchases different types of tickets, and a central computer system that maintains a reference database for the tariff. Use cases should include *BuyOneWayTicket*, *BuyWeeklyCard*, *BuyMonthlyCard*, and *UpdateTariff*. Also include the following exceptional cases: *TimeOut*, *TransactionAborted*, *DistributorOutOfChange*, and *DistributorOutOfPaper*.

II. QUESTION (20 POINTS)

Describe the *BuyOneWayTicket* use in detail. Include also exceptional cases. Write the event flows, entry conditions, exit conditions, and participating actors, etc.

III. QUESTION (20 POINTS)

Draw a sequence diagram for the *BuyOneWayTicket* use case.

IV. QUESTION (20 POINTS)

Design a class diagram for the following object model: A *League* consists of multiple *tournament*s, where a *tournament* contains multiple *round*s. A *player* can play in multiple *tournament*s and of course a *tournament* is possible only with multiple *player*s. Assume League, Tournament, Player and Round have a name attribute and a unique identifier. Additionally, Tournament and Round have start and end date attributes.

V. QUESTION (20 POINTS)

1. Which of the following class user is responsible for developing specializations of the class under consideration?

A) Class implementor
B) Class user
C) Class extender
D) None of the above

2. Select a control mechanism most appropriate for the following system: A web server designed to sustain high loads.

A) procedure driven control
B) event driven control
C) threads
D) none of the above

3. Let say you have voluminous data history logs. Which of the following storage management strategy is the best?

A) Flat files
B) Relational database
C) Object-oriented database
D) None of the above

4. The multiplicity of the association between Student and Course is?

A) 1 to many
B) 1 to 1
C) Many to 1
D) Many to Many

5. A use case in a use-case diagram is represented via

A) A rectangle
B) An ellipse
C) A triangle
D) A rectangle where use case name is underlined

6. Which of the following is an example of Greenfield Engineering?

A) Develop an automated campus management system to a university with a manual management system.
B) Develop a new interface to a library with an existing catalog management system.
C) Develop a new interface to a library with an existing catalog management system.
D) Improve a game to make it run faster.

7. A desirable property of a subsystem decomposition is that is leads to subsystems . . . coupled and with . . . cohesion

A) strongly - high
B) loosely - high
C) strongly - low
D) loosely - low

8. A . . . architecture style is a generalization of the client/server architectural style

A) model/view/controller
B) repository
C) three-tier
D) peer-to-peer

9. Olcay Taner is the instructor of CSE400 course and he does not want any student can change his/her grades and Kristen is a freshman and she is not familiar with computer and wants to registration for the first semester. According to this information which non-functional requirement is important.

A) Security-usability
B) Backward compability-forward compability
C) Robustness-user friendly
D) Reliability-reusability

10. AuthenticateWithPassword and AuthenticateWithCard use cases have . . . relationship with Authentication use case

A) Communication
B) Include
C) Extend
D) Inheritance