CISP457 Practice Final

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May 16, 2005

Instructions: You may bring any material that is handwritten or printed *prior* to the examination to help you. You can also bring a calculator if you think it may help you. However, you can only use the calculator for numerical computations only.

You, as an individual, are expected to do your own work. This means you cannot seek, receive or otherwise acquire any assistance except clarifications from the professor during an examination. Any communication involving the contents of the subject matter or the examination is considered cheating. Do not initiate or accept such communication, or the result of your examination is automatically voided.

Each correct answer is worth one point, each wrong answer is worth -0.25 point, and each unanswered question is worth zero point.

Make sure you write down you name on the upper right corner *first*, otherwise I cannot give points to anonymous students!

1 Who is responsible to maintain the daily operation of a computer information system?

    A a systems analyst

    B a systems administrator

    C a programmer

    D a technical writer

    E a test engineer

2 What does the client know?

    A domain specific knowledge

    B how to write systems specification documents

    C how to write test plans

    D how to write programs

    E how to write end-user documents

3 Which of the following is a financial requirement?

    A the system has the capacity for 40% growth

    B the system be safe from viruses and worms

    C the total development cost be no more than $1,200,000

    D the final stage be delivered no later than July 23, 2006

    E the daily downtime be no more than 10 minutes
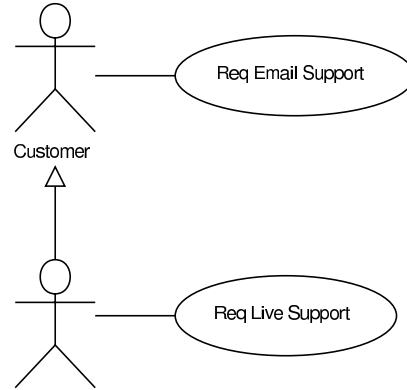
4 Premium Customer

In this use case diagram, which of the following statement is true?

    A Customer generalizes Premium Customer

    B Req Live Support specializes Req Email Support

    C Req Live Support generalizes Req Email Support

    D Premium Customer generalizes Customer

    E Both 4a and 4c

5 What is the purpose of a use case diagram?

    A to document the logic of system behavior

    B to document how classes relate

    C to document external agents and how they see the system

    D to document non-functional requirements

    E to document an example system interaction sequence

6 Explain why "request spell check" is *not* a use case in a system designed for web logging (blogging).

    A it is not complete (an article must have been written first)

    B it does not serve any value

    C it does not involve an actor

    D it is not complete and it does not serve any value

E it is not complete, does not serve any value, and does not involve an actor

7 Which of the following *cannot* an element in a sequence diagram?

A an object

B a call message/stimulus

C a reply message/stimulus

D a dispatch action

E all of the above are (possible) elements in a sequence diagram

8 Which of the following can be an actor in a use case diagram?

A Brad Pitt

B producer

C movie

D rate movie

E none of the above is suitable as an actor in a use case diagram

9 Which of the following can be a use case in a use case diagram?

A Brad Pitt

B producer

C movie

D rate movie

E none of the above is suitable as an actor in a use case diagram

10 The client says "an expert user is a user, except that an expert user can ... in addition to what a user can do."

What is the relationship between the actor "user" and the actor "expert user"? (Hint: think of what relationships are allowed between actors.)

A "user" generalizes "expert user"

B "user" includes "expert user"

C "expert user" includes "user"

D "expert user" generalizes "user"

E "expert user" extends "user"

11 Which of the following cost is unlikely to be a cost component after the development phase is completed?

A cost of system upgrade

B salary of systems administrators

C salary of programmers

D cost of internet service provider (for an online system)

E cost annual maintenence contracts

12 Observe the following cumulative cost chart:

Cumulative Cost Comparison
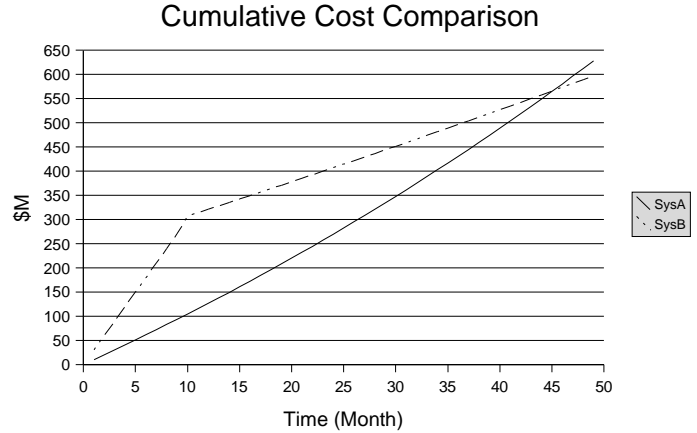
Which of the following is true?

A System A is always less expensive than system B

B System B is always less expensive than system A

C System B does not start saving money until about month 45

D System A does not start saving money until about month 45

E None of the above is true

13 Which part of the following flowchart is potentially repetitive?
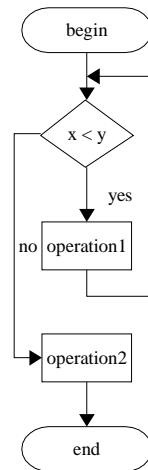
A operation1

B operation2

C operation1 and operation2

D operation1 and the condition check $x < y$

E operation2 and the condition check $x < y$

14 In the following decision table, which action(s) is/are taken when C1 is true, C2 is false and C3 is true?

2

C1	C2	C3	A1	A2	A3
T	T	T	X	X	X
T	T	F		X	
T	F	T	X	X	
T	F	F	X	X	X
F	T	T		X	X
F	T	F	X	X	
F	F	T		X	X
F	F	F	X	X	

    A only A1

    B only A1 and A3

    C only A1 and A2

    D only A2 and A3

    E only A3

15 We need to express the logic/process to validate a credit card transaction. Which type of diagram is appropriate for this purpose?

    A state diagram

    B activity diagram

    C use case diagram

    D class diagram

    E sequence diagram

16 In the following state diagram, what happens when the user clicks the "start" button when the timer is still in "idle" state?
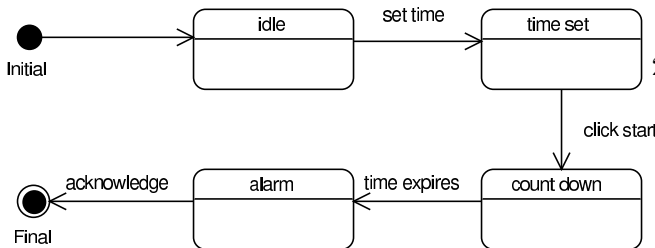
    A nothing happens

    B the timer jumps from the "idle" state to the "count down" state

    C the timer transitions from the "idle" state to the "time set" state

    D the timer jumps to the final state

    E the timer restarts from the initial state

17 Despite the fact that activity diagrams are not "structured" like decision trees, decision tables and pseudocode, what is a strong point of activity diagrams that makes it unique?

    A ability to express data flow

    B ability to express parallel threads

    C ability to express loops

    D ability to interleave decisions and actions

    E the combination of all of the above

18 The aggregation relationship can be used in which type of diagrams?

    A class diagram

    B use case diagram

    C sequence diagram

    D activity diagram

    E state diagram

19 Which diagram describes how the deletion of an object of a class may trigger the deletion of an object of another class?

    A class diagram

    B use case diagram

    C sequence diagram

    D activity diagram

    E state diagram

20 Each transition coming out of a decision state in an activity diagram must have...

    A a trigger specified

    B a guard condition specified

    C an action specified

    D a trigger and a guard condition specified

    E a trigger and an action specified

21 We need to modify the "feel-and-look" of a system. For example, a numeric field in an user interface may be enhanced to only allow digits at data-entry time. What classes will be modified? (Note that a modification *may* necessitate everything be changed, I am just asking which ones *needs* to be changed.)

    A Boundary classes

    B Control classes

    C Data classes

    D Control classes and Data classes

    E Boundary classes and Data classes

22 We are given some tables, and we know that the column `someID` is used as a primary key in one table, while it is used as a foreign key in the others. Which table uses `someID` as a primary key?

This is table1:

someID	colA	colB
143	Tony	Smith
3511	Jane	White
23	Pat	Peterson
782	Kenny	Lee

This is table2:

someID	colC
143	1582
143	2328
3511	3849
23	48293

This is table3:

someID	colD
143	5928
3511	99832
23	37293
23	23212

   A table1

   B table2

   C table3

   D table1 and table2

   E all three tables use "someID" as a primary key

23 If a table/class does not conform to the second normal form, what is one of the potential problems?

   A difficult to search

   B difficult to query (resulting in long and complex queries)

   C consumes more storage than necessary

   D requires too many supporting tables

   E easy to make mistakes in queries

24 The following table does not confirm to which normal form?

ID	FirstName	LastName	Phone1	Phone2
2384	Tak	Auyeung	555-5555	
93022	Damon	Antos	123-4556	283-2839
49208	Dave	Fox	987-6543	

   A first normal form

   B second normal form

   C third normal form

   D all of the above (yes, this is the correct answer!)

   E none of the above, this class conforms to all three normal forms.