Eerste deeltentamen Modelleren en Systeemontwikkeling
donderdag 18 december 2003, 12:00–13:30

1. Internal quality factors are properties of a software product that _____
    a. influence their ability to react appropriately to abnormal conditions
    b. are perceptible only to computer professionals who have access to the actual software text
    c. are perceptible to those who purchase the software or contract out its development
    d. ensure that the software may serve for the construction of many different applications
    e. determine the demands placed on hardware resources, such as processor time, space occupied in internal and external memories, bandwidth used in communication devices

2. Portability is _____
    a. the ease of transferring software products to various hardware and software environments
    b. the ease of adapting software products to changes of specification
    c. the ability of software elements to serve for the construction of many different applications
    d. the ease with which people of various backgrounds and qualifications can learn to use software products and apply them to solve problems
    e. the ease of installation, operation and monitoring

3. Objects are characterized by _____
    a. reliability, modularity and flexibility
    b. flexibility, compatibility and portability
    c. identity, state and behaviour
    d. state, behaviour and inheritance
    e. overriding and overloading

4. Let `Professor` be a subtype of `Person`. The definition
        `Person p = new Professor();`
    has the effect that
    a. `p` has static type `Professor` and dynamic type `Person`
    b. `p` has static type `Person` and dynamic type `Professor`
    c. `p` has static and dynamic type `Person`
    d. `p` has static and dynamic type `Professor`
    e. a compiler error message will be generated

5. The Liskov Substitution Principle states that
    a. a class should be open for extension but closed for modification
    b. code duplication should be avoided in the interest of extendibility
    c. clients should access services through an interface or abstract class
    d. subclasses should be able to perform all the tasks of their superclass
    e. methods should guarantee invariants even if they raise an exception

6. The four phases of the Systems Development Life Cycle are _____.
    a. analysis, gathering, modeling, and diagramming
    b. construction, installation, testing, and converting
    c. designing, charting, formatting, and structuring
    d. planning, analysis, design, and implementation
    e. system request, feasibility, planning, and staffing

7. The analysis phase of the SDLC answers which questions _____.
    a. who will create the system and when will it be used
    b. who will the system be for, what the system will do, when will it be used, and where will it be used
    c. why build the system, what the system will be, and how the system will work
    d. why build the system, who will the system be for, when will it be used, and how the system will work
    e. why build the system, who will the system be for, when will it be used, and where will it be used

8. The principal disadvantage(s) with the waterfall development methodology is (are) _____.
    a. a long time elapses between completion of the system proposal and the delivery of the system
    b. it identifies system requirements long before programming begins
    c. it minimizes changes to the requirements as the project proceeds
    d. the design must be completely specified on paper before programming begins
    e. a long time elapses between completion of the system proposal and the delivery of the system and the design must be completely specified on paper before programming begins

9. When the methodology requires that the system be broken into a series of versions that are developed sequentially, the analyst is performing _____ development.
    a. parallel
    b. phased
    c. prototyping
    d. rapid Application
    e. throwaway prototyping

10. Modern object-oriented systems analysis and design approaches using UML emphasize _____ and _____ development that undergoes continuous testing and refinement throughout the life of the project.
    a. iterative, incremental
    b. quick, dirty
    c. slow, methodical
    d. quick, incremental
    e. iterative, methodical

11. The _____ of a system describes why the information system should be built and why it should be funded.
    a. project sponsor
    b. business need
    c. functionality
    d. expected value
    e. feasibility analysis

12. Which of the following factors could be included in a technical risk assessment?
    a. Cost of a new Web server
    b. Cost of hiring a Webmaster
    c. No previous use of Java within the IS department
    d. Some fear of job loss among order entry department personnel
    e. All of the above

13. Examples of development costs include all EXCEPT _____.
    a. consultant fees
    b. hardware expenses
    c. salaries for the project team
    d. software licensing fees
    e. none of the above

14. The organizational management of a business may perform which one of the following roles?
    a. allocating time to the project
    b. encouraging users to accept the project
    c. making decisions that influence the project
    d. initiating the project
    e. providing resources

15. Kathryn has little experience estimating the time it will take to complete a systems project. She has just completed the planning phase of the project. What method should she use to estimate the time required to build the system?
    a. adjusted project complexity
    b. function points
    c. industry standards
    d. Microsoft Project
    e. more complex approach

16. When estimating the project time schedule after the size of a project has been determined, the next step is to estimate the _____ that is required for each task.
    a. abundance
    b. effort
    c. function point
    d. system size
    e. time

17. The project team has just determined that the deadline for completion will not be met. In order to deliver a high quality system on schedule, the team has requested that the features be prioritized. _____ has been applied to this project.
    a. Effort estimation
    b. Function points analysis
    c. RAD
    d. Schedule time
    e. Timeboxing

18. A good technique to help minimize conflict among team members is to
    a. clearly define their roles on the project
    b. hold team members accountable for their tasks
    c. develop a project charter that lists the project's norms
    d. develop a project charter that lists the project's ground rules
    e. all of the above are good techniques to use

19. The most common reason for schedule and cost overruns that surface after the project is underway is _____.
    a. scope creep
    b. the lack of a project manager
    c. the use of meetings to define project requirements
    d. the use of prototyping to define project requirements
    e. none of the above

20. _____ requires technology skills and significant business expertise in the functional area being examined.
    a. Buying a PC
    b. Coding the to-be-system
    c. Identifying improvement opportunities
    d. Planning a CASE analysis
    e. Writing a systems proposal

21. Omar has decided to ask the users and managers to identify problems with the current system and to recommend how to solve these problems in the future system. They have recommended small incremental changes. Omar is identifying improvement opportunities through _____.
    a. duration analysis
    b. outcome analysis
    c. problem analysis
    d. root cause analysis
    e. technology analysis

22. Hussain, a systems analyst for State University, has organized a group of systems people from six universities for regular meetings, campus visits, and cost information sharing. This is an example of _____ benchmarking.
    a. formal
    b. informal
    c. outcome
    d. proxy
    e. simplification

23. Gwynne has eliminated the complexity of the day-to-day operations for the order entry system at Lands End by moving special cases to exception processes. She is identifying improvement opportunities through _____.
    a. activity elimination
    b. breaking assumptions
    c. outcome analysis
    d. process simplification
    e. technology analysis

24. An interview style that seeks a broad and roughly defined set of information is commonly called _____.
    a. closed
    b. open
    c. structured
    d. unstructured
    e. none of the above

25. A systems analyst would like to run a well-structured JAD session. The least common type of question asked should be _____.
    a. bottom ended
    b. closed ended
    c. long and detailed
    d. open ended
    e. unstructured

26. Each use case is associated with _____ role(s) that users have in the system.
    a. one
    b. one or more
    c. many
    d. zero, one, or more
    e. all

27. The event that causes a use case to begin is called a(n) _____.
    a. action
    b. trigger
    c. hammer
    d. anvil
    e. stakeholder

28. Use cases are typically written to document the normal flow of events. When an exception occurs in that flow, it is documented in the use case with _____ flows.
    a. alternate
    b. extended
    c. optional
    d. included
    e. loop

29. The correct sequence of the major steps in creating use case diagrams is _____.
    a. identify the major use cases, expand the major use cases, confirm the major use cases, create the use-case diagram
    b. identify the major use cases, expand the major use cases, create the use-case diagram, confirm the major use cases
    c. create the use-case diagram, identify the major use cases, expand the major use cases, confirm the major use cases
    d. create the use-case diagram, identify the major use cases, confirm the major use cases, expand the major use cases
    e. identify the major use cases, confirm the major use cases, expand the major use cases, create the use-case diagram

30. When drawing the use-case diagram, an analyst should do the steps in this order: _____.
    a. draw the use cases on the diagram, identify the system boundary, place the actors on the diagram, and draw the lines connecting the actors to the use cases
    b. identify the system boundary, draw the use cases on the diagram, place the actors on the diagram, and draw the lines connecting the actors to the use cases
    c. place the actors on the diagram, draw the use cases on the diagram, identify the system boundary, and draw the lines connecting the actors to the use cases
    d. identify the system boundary, place the actors on the diagram, draw the use cases on the diagram, and draw the lines connecting the actors to the use cases
    e. none of the above gives the correct order of steps

31. Which of the following are used to create objects?
    a. concrete objects
    b. abstract objects
    c. concrete classes
    d. abstract classes
    e. concrete instances

32. Which of the following would most likely **not** be an example of an attribute?
    a. employee name
    b. customer address
    c. stock number
    d. ISBN number
    e. cancel appointment

33. If a "student signs up for a class," which type of relationship would you use to model the relationship between the two?
    a. generalization
    b. association
    c. aggregation
    d. composition
    e. implementation

34. A collaboration consists of _____.
    a. two instances of a class talking with each other
    b. two instances of a class knowing the value of each others attributes
    c. a set of classes that share common operations
    d. a set of classes that are all related to one another
    e. a set of classes involved in a use case

35. Attributes and operations marked by # in a class diagram are _____.
    a. visible in subclasses and in the package
    b. calculated from other attributes
    c. visible everywhere
    d. visible only within the same class
    e. stored at the class level rather than the object level

36. A systems analyst uses _____ to model the changes that occur in the underlying data in a system.
    a. use-case models
    b. structural models
    c. behavioral models
    d. interaction diagrams
    e. statechart diagrams

37. A systems analyst draws a lifeline with an X at the end. This lifeline represents _____.
    a. a message that cannot be delivered
    b. an object that is destroyed at a point in time
    c. a message that is delivered at that point in time
    d. an object that is complete at that point in time
    e. an object that arrives at its final destination

38. On a sequence diagram, an object name of Students:List would indicate that _____.
    a. Students is an instance of the List class
    b. List is an instance of the Students class
    c. List is a method of the Students class
    d. the Students and Lists objects are combined for that step in the sequence diagram
    e. a message is being passed from the Students class to the List class

39. When an object sends a message to itself in a sequence diagram, that is referred to as _____.
    a. recursive-messaging
    b. self-messaging
    c. self-delegation
    d. recursive-delegation
    e. none of the above

40. In a statechart diagram, a(n) _____ triggers a change in an object's state.
    a. event
    b. transition
    c. activity
    d. initial state
    e. final state