Test BankIT242: Software Engineering

Chapter 12

1. Which of the following are areas of concern in the design model?
    a) Architecture
    b) Data
    c) Interfaces
    d) Project scope
    e) a, b, c

2. The importance of software design can be summarized in a single word
    a) Accuracy
    b) Complexity
    c) Efficiency
    d) Quality

3. Which of these are characteristics of a good design?
    a) exhibits strong coupling between its modules
    b) implements all requirements in the analysis model
    c) includes test cases for all components
    d) provides a complete picture of the software
    e) b and d

4. Which of the following is not a characteristic common to all design methods?
    a) configuration management
    b) functional component representation
    c) quality assessment guidelines
    d) refinement heuristics

5. What types of abstraction are used in software design?
    a) Control
    b) Data
    c) Environmental
    d) Procedural
    e) a, b, d

6. Which of the following can be used to represent the architectural design of a piece of software?
    a) Dynamic models
    b) Functional models
    c) Structural models
    d) All of the above

7. Design patterns are not applicable to the design of object-oriented software?
    a) True
    b) False

8. Since modularity is an important design goal it is not possible to have too many modules in a proposed design.
    a) True
    b) False

9. Information hiding makes program maintenance easier by hiding data and procedure from unaffected parts of the program.
    a) True
    b) False

10. Cohesion is a qualitative indication of the degree to which a module
    a) can be written more compactly.
    b) focuses on just one thing.
    c) is able to complete its function in a timely manner.
    d) is connected to other modules and the outside world.

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12. When using structured design methodologies the process of stepwise refinement is unnecessary.
    a) True
    b) False

13. Software designs are refactored to allow the creation of software that is easier to integrate, easier to test, and easier to maintain.
    a) True
    b) False

14. Which of the following is not one of the five design class types
    a) Business domain classes
    b) Entity classes
    c) Process classes
    d) User interface classes

15. Which design model elements are used to depict a model of information represented from the user's view?
    a) Architectural design elements
    b) Component-level design elements
    c) Data design elements
    d) Interface design elements

16. Which design is equivalent to the floor plan of a house?
    a) Architectural design
    b) Component-level design
    c) Data design
    d) Interface design

17. Which design model is equivalent to the detailed drawings of the access points and external utilities for a house?
    a) Architectural design
    b) Component-level design
    c) Data design
    d) Interface design

18. Which design model is equivalent to a set of detailed drawings for each room in a house?
    a) Architectural design
    b) Component-level design
    c) Data design
    d) Interface design

19. The deployment design elements specify the build order for the software components.

    a) True

    b) False

20. Software architecture alludes to “the overall structure of the software and the ways in which that structure provides _____ for a system”.

    a) Form

    b) Data abstraction

    c) Conceptual integrity

    d) Specifications

Chapter 13

1. The best representation of system architecture is an operational software prototype.
    a) True
    b) False

2. The architectural representations can be an enabler for communication among project stakeholders.
    a) True
    b) False

3. An architectural description is often documented using an architecture template.
    a) True
    b) False

4. An architectural decision is often documented using an architecture decision description template.
    a) True
    b) False

5. An architectural genre will often dictate the architectural approach that may used for the structure to be built.
    a) True
    b) False

6. An architectural style encompasses which of the following elements?
    a) Constraints
    b) Set of components
    c) Semantic models
    d) Syntactic models
    e) a,b,c

7. To determine the architectural style or combination of styles that best fits the proposed system, requirements engineering is used to uncover
    a) Algorithmic complexity
    b) Characteristics and constraints
    c) Control and data
    d) Design patterns

8. Before an architectural pattern can be chosen for use in a specific system it must have a code implementation to facilitate its reuse.
    a) True
    b) False

9. The criteria used to assess the quality of an architectural design should be based on system
    a) Accessibility
    b) Control
    c) Data
    d) Implementation
    e) b and c

10. Software architectural considerations often interact with each other and moderate each other.
    a) True
    b) False

11. Developer notes are not a reliable means of documenting architectural decisions
    a) True
    b) False

12. During process of modeling the system in context, systems that interact with the target system are represented as
    a) Peer-level systems
    b) Subordinate systems
    c) Superordinate systems
    d) Working systems
    e) a,b,c

13. Once selected, archetypes always need to be refined further as architectural design proceeds.
    a) True
    b) False

14. Which of the following is not an example of infrastructure components that may need to be integrated into the software architecture?
    a) Communications components
    b) Database components
    c) Interface components
    d) Memory management components

15. In the architecture trade-off analysis method the architectural style should be described using the
    a) Data flow view
    b) Module view
    c) Process view
    d) User view
    e) a, b, c

16. A useful technique for evaluating the overall complexity of a proposed architecture is to look at the component
    a) Cohesion
    b) Flow dependencies
    c) Sharing dependencies
    d) Size
    e) b and c

17. Software architects need to create consensus among software team members and other stakeholders.
    a) True
    b) False

18. Pattern-based architectural reviews can be useful for project with short build cycles and volatile requirements.
    a) True
    b) False

19. Static architectural conformance checking assesses whether or not the source code matches the user visible requirements.
    a) True
    b) False

20. Architectural design has no role in agile software process models.
    a) True
    b) False

Chapter 17

1. Which of the following characteristics should not be used to assess the quality of a WebApp?
    a) Aesthetics
    b) Reliability
    c) Maintainability
    d) Usability

2. Which of the following are design goals for every WebApp?
    a) Simplicity
    b) Consistency
    c) Navigability
    d) Visual appeal
    e) All of the above

3. Which of the following not part of the design pyramid for WebE design?
    a) Architectural design
    b) Business case design
    c) Content design
    d) Navigation design

4. With WebApps content is everything, a poorly defined user interface will be quickly overlooked by frequent users.
    a) True
    b) False

5. Which of these are WebApp interaction mechanisms?
    a) Graphic icons
    b) Graphic images
    c) Navigations menus
    d) All of the above

6. Screen layout design has several widely accepted standards based on human factors research.
    a) True
    b) False

7. Graphic design considers every aspect of the look and feel of a WebApp.
    a) True
    b) False

8. Content design is conducted by
    a) Copywriters and graphic designer
    b) Web engineers
    c) Both a and b
    d) None of the above

9. Content objects have both information attributes defined during analysis and implementation specific attributes specified during design.
    a) True
    b) False

10. Content objects are not normally chunked into Web pages until the implementation activities begin.
    a) True
    b) False

11. Content architecture and WebApp architecture are pretty much the same thing for many WebApps?
    a) True
    b) False

12. Which of the following is not one of the content architectural structures used by web engineers?
    a) Linear
    b) Grid
    c) Hierarchical
    d) Parallel

13. MVC is a three layer architecture that contains a
    a) machine, view, content objects
    b) model, view, and content objects
    c) model, view, and controller
    d) machine, view, controller

14. Web navigational design involves creating a semantic navigational unit for each goal associated with each defined user role.
    a) True
    b) False

15. To allow the user to feel in control of a WebApp, it is a good idea to mix both horizontal and vertical navigation mechanisms on the same page.
    a) True
    b) False

16. Component level design for WebApps is very similar to component level design for other software delivery environments.
    a) True
    b) False

17. Which of these is not one of the design activities associated with object-oriented hypermedia design?
    a) Abstract interface design
    b) Conceptual design
    c) Content design
    d) Navigational design

18. UML does not have any representation schemas that are useful in building WebApp design models.
    a) True
    b) False

Chapter 15

1. Which of the following interface design principles does not allow the user to remain in control of the interaction with a computer?
    a) allow interaction to interruptible
    b) allow interaction to be undoable
    c) hide technical internals from casual users
    d) only provide one rigidly defined method for accomplishing a task

2. Which of the following interface design principles reduce the user's memory load?
    a) define intuitive shortcuts
    b) disclose information in a progressive fashion
    c) establish meaningful defaults
    d) provide an on-line tutorial
    e) a, b, c

3. The reason for reducing the user's memory load is make his or her interaction with the computer quicker to complete.
    a) True
    b) False

4. Interface consistency implies that
    a) each application should have its own distinctive look and feel
    b) input mechanisms remain the same throughout the application
    c) navigational methods are context sensitive
    d) visual information is organized according to a design standard
    e) b and d

5. If past interactive models have created certain user expectations it is not generally good to make changes to the model.
    a) True
    b) False

6. Which model depicts the profile of the end users of a computer system?
    a) design model
    b) implementation model
    c) user model
    d) system perception

7. Which model depicts the image of a system that an end user creates in his or her head?
    a) design model
    b) user model
    c) system model
    d) system perception

8. Which model depicts the look and feel of the user interface along with all supporting information?
    a) implementation model
    b) user model
    c) system model
    d) system perception

9. Which of these framework activities is not normally associated with the user interface design processes?
    a) cost estimation
    b) interface construction
    c) interface validation
    d) user and task analysis

10. Which approach(es) to user task analysis can be useful in user interface design?
    a) have users indicate their preferences on questionnaires
    b) rely on the judgement of experienced programmers
    c) study existing computer-based solutions
    d) observe users performing tasks manually
    e) c and d

11. Object-oriented analysis techniques can be used to identify and refine user task objects and actions without any need to refer to the user voice.
    a) True
    b) False

12. The computer's display capabilities are the primary determinant of the order in which user interface design activities are completed.
    a) True
    b) False

13. It is sometimes possible that the interface designer is constrained by environmental factors that mitigate against ease of use for many users.

    a) True
    b) False

14. One means of defining user interface objects and actions is to conduct a grammatical parse of the user scenario.

    a) True
    b) False

15. Interface design patterns typically include a complete component-level design (design classes, attributes, operations, and interfaces).

    a) True
    b) False

16. Several common design issues surface for almost every user interface including

    a) adaptive user profiles
    b) error handling
    c) resolution of graphics displays
    d) system response time
    e) b and d

17. It is more important to capture the user's attention with flashy features than ergonomically sound screen layouts when building a WebApp.

    a) True
    b) False

18. Several usability measures can be collected while observing users interacting with a computer system including

    a) down time for the application
    b) number of user errors
    c) software reliability
    d) time spent looking at help materials
    e) b and d

Chapter 22

1. In software quality assurance work there is no difference between software verification and software validation.
    a) True
    b) False

2. The best reason for using Independent software test teams is that
    a) software developers do not need to do any testing
    b) strangers will test the software mercilessly
    c) testers do not get involved with the project until testing begins
    d) the conflicts of interest between developers and testers is reduced

3. What is the normal order of activities in which traditional software testing is organized?
    a) integration testing, system testing, unit testing, validation testing.
    b) unit testing, validation testing, system testing, integration testing
    c) unit testing, integration testing, validation testing, system testing
    d) validation testing, system testing, integration testing, unit testing

4. By collecting software metrics and making use of existing software reliability models it is possible to develop meaningful guidelines for determining when software testing is done.
    a) True
    b) False

5. Which of the following strategic issues needs to be addressed in a successful software testing process?
    a) conduct formal technical reviews prior to testing
    b) specify requirements in a quantifiable manner
    c) use independent test teams
    d) wait till code is written prior to writing the test plan
    e) a and b

6. Which of the following need to be assessed during unit testing?
    a) algorithmic performance
    b) code stability
    c) error handling
    d) execution paths
    e) c and d

7. Units and stubs are not needed for unit testing because the modules are tested independently of one another.
    a) True
    b) False

8. Top-down integration testing has as its major advantage(s) that
    a) low level modules never need testing
    b) major decision points are tested early
    c) no drivers need to be written
    d) no stubs need to be written
    e) b and c

9. Bottom-up integration testing has as its major advantage(s) that
    a) major decision points are tested early
    b) no drivers need to be written
    c) no stubs need to be written
    d) regression testing is not required

10. Regression testing should be a normal part of integration testing because as a new module is added to the system new
    a) control logic is invoked
    b) data flow paths are established
    c) drivers require testing
    d) all of the above
    e) a and b

11. Smoke testing might best be described as
    a) bulletproofing shrink-wrapped software
    b) rolling integration testing
    c) testing that hides implementation errors
    d) unit testing for small programs

12. When testing object-oriented software it is important to test each class operation separately as part of the unit testing process.
    a) True
    b) False

13. The OO testing integration strategy involves testing
    a) groups of classes that collaborate or communicate in some way
    b) single operations as they are added to the evolving class implementation
    c) single operations as they are added to the evolving class implementation
    d) none of the above

14. Since many WebApps evolve continuously, the testing process must be ongoing as well.
    a) True
    b) False

15. Testing MobileApps is not different than testing WebApps.
    a) True
    b) False

16. The focus of validation testing is to uncover places that s user will be able to observe failure of the software to conform to its requirements.
    a) True
    b) False

17. Software validation is achieved through a series of tests performed by the user once the software is deployed in his or her work environment.
    a) True
    b) False

18. Configuration reviews are not needed if regression testing has been rigorously applied during software integration.
    a) True
    b) False

19. Acceptance tests are normally conducted by the
    a) Developer
    b) End users
    c) Test team
    d) Systems engineers

20. Recovery testing is a system test that forces the software to fail in a variety of ways and verifies that software is able to continue execution without interruption.

    a) True

    b) False

21. Security testing attempts to verify that protection mechanisms built into a system protect it from improper penetration.

    a) True

    b) False

22. Stress testing examines the pressures placed on the user during system use in extreme environments.

    a) True

    b) False

23. Performance testing is only important for real-time or embedded systems.

    a) True

    b) False

24. Debugging is not testing, but always occurs as a consequence of testing.

    a) True

    b) False

25. Which of the following is an approach to debugging?

    a) Backtracking

    b) Brute force

    c) Cause elimination

    d) Code restructuring

    e) a, b, c

Chapter 25

1. Which of the following is not one of the dimensions of quality used to assess a WebApp?
    a) Content
    b) Maintainability
    c) Navigability
    d) Usability

2. WebApps require special testing methodologies because WebApp errors have several unique characteristics.
    a) True
    b) False

3. Since WebnApps evolve continuously, the testing process is an on-going activity, conducted by the Web support staff using regression tests.
    a) True
    b) False

4. Test planning is not used in WebApp testing.
    a) True
    b) False

5. As the WebApp architecture is constructed which types of testing are used as integration tests?
    a) Component testing
    b) Content testing
    c) Navigation testing
    d) Usability testing
    e) Both a and c

6. Which of the following is not one of the objectives of WebApp content testing?
    a) Find organizational or structure errors
    b) Identify linking errors
    c) Uncover semantic errors
    d) Uncover syntactic errors

7. Database testing is very rarely a part of WebApp content testing.
    a) True
    b) False

8. The overall strategy for interface testing is to uncover errors
    a) in navigation semantics
    b) in overall usabililty
    c) related to specific interface mechanisms
    d) both a and c

9. Which of the following is not a WebApp interface mechanism?
    a) Browser
    b) Cookies
    c) Forms
    d) Links

10. When testing WebApp interface semantics, each use-case is used as input for the design of a testing sequence.
    a) True
    b) False

11. Usability tests should be designed and executed by intended users for a given WebApp.
    a) True
    b) False

12. WebApp compatibility testing is conducted to be sure that the user model for usage scenario matched the user category assigned to a given user.
    a) True
    b) False

13. Which test case design technique(s) are appropriate for WebApp component-level testing?
    a) Boundary value analysis
    b) Equivalence partitioning
    c) Path testing
    d) All of the above

14. The purpose of WebApp navigation syntactic testing is to ensure the correct appearance of each navigation mechanism.
    a) True
    b) False

15. Both Web engineers and non-technical users conduct navigation semantics testing for WebApps.
    a) True
    b) False

16. Which of following is not one of the elements that need to be considered when constructing WebApp server-side configuration tests?
    a) Browser compatibility
    b) Database software integration
    c) Operating system compatibility
    d) System security measures

17. To design client-side configuration tests each user category is assessed to reduce the number of configuration variables to a manageable number.
    a) True
    b) False

18. Which of the following is not a testable WebApp security element?
    a) Authentication
    b) Encryption
    c) Firewalls
    d) Penetration

19. WebApp performance tests are designed to
    a) asses WebApp usability
    b) evaluate page loading times
    c) simulate real-world loading situations
    d) test network connectivity

20. Load testing involves determining the input of which 3 variables?
    a) N, T, D
    b) N, T, P
    c) T, D, P
    d) N, D, P

21. WebApp stress testing is a continuation load testing.
    a) True
    b) False

Chapter 19

1. Quality of conformance focuses on the degree to which the implementation of a design meets its requirements and performance goals.
    a) True
    b) False

2. Which of the following is not one of the attributes of software quality?
    a) Adds value for developers and users
    b) Effective software process creates infrastructure
    c) Removes need to consider performance issues
    d) Useful products satisfy stakeholder requirements

3. Product quality can only be assessed by measuring hard quality factors.
    a) True
    b) False

4. Many software metrics can only be measured indirectly.
    a) True
    b) False

5. Which of the following are ISO 9126 software quality factors?
    a) Functionality
    b) Portability
    c) Reliability
    d) Visual Appeal
    e) a, b, c

6. Developers need to create a collection of targeted questions to asses each quality factor.
    a) True
    b) False

7. Software metrics represent direct measures of some manifestation of quality.
    a) True
    b) False

8. The quality dilemma might be summarized as choosing between building things quickly or building things correctly.
    a) True
    b) False

9. Good enough software delivers high quality software functions along with specialized functions that contain known bugs.
    a) True
    b) False

10. Which of the following is likely to be the most expensive cost of quality?
    a) Appraisal costs
    b) External failure costs
    c) Internal failure costs
    d) Prevention costs

11. Poor quality leads to software risks that can become serious?
    a) True
    b) False

12. When a system fails to deliver required functions it is because the customer changes requirements?
    a) True
    b) False

13. Developers must start focusing on quality during the design phase in order to build secure systems.

    a) True
    b) False

14. Which of the following management decisions have the potential to impact software quality?

    a) Estimation decisions
    b) Risk-oriented decisions
    c) Scheduling decisions
    d) All of the above

15. The project plan should include explicit techniques for _____ and _____ management?

    a) Change
    b) Cost
    c) Error
    d) Quality
    e) a and d

16. Quality control encompasses a set of software engineering actions that help to ensure that each work product meets its quality goals.

    a) True
    b) False

17. The goal of quality assurance is to insure that a software project is error free.

    a) True
    b) False

Chapter 36

1. How much effort is typically expended by a software organization on software maintenance?
    a) 20 percent
    b) 40 percent
    c) 60 percent
    d) 80 percent

2. Software supportability is not concerned with either the provision of hardware or infrastructure.
    a) True
    b) False

3. Business process reengineering is often accompanied by software reengineering.
    a) True
    b) False

4. Which of the following is not an example of a business process?
    a) Designing a new product
    b) Hiring an employee
    c) Purchasing services
    d) Testing software

5. Business process reengineering does not have a start or end, it is an evolutionary process.
    a) True
    b) False

6. Which of the following activities is not part of the software reengineering process model?
    a) Forward engineering
    b) Inventory analysis
    c) Prototyping
    d) Reverse engineering

7. Software reengineering process model includes restructuring activities for which of the following work items?
    a) Code
    b) Documentation
    c) Data
    d) All of the above

8. Which of the following is not an issue to consider when reverse engineering?
    a) Abstraction level
    b) Completeness
    c) Connectivity
    d) Directionality

9. Reverse engineering of data focuses on
    a) Database structures
    b) Internal data structures
    c) Both a and b
    d) None of the above

10. The first reverse engineering activity involves seeking to understand
    a) Data
    b) Processing
    c) User interfaces
    d) None of the above

11. Reverse engineering should proceed the reengineering of any user interface.
    a) True
    b) False

12. Which of these benefits can be achieved when software is restructured?

    a) Higher quality programs

    b) Reduced maintenance effort

    c) Software easier to test

    d) All of the above

13. Code restructuring is a good example of software reengineering.

    a) True

    b) False

14. Which of these is not an example of data restructuring?

    a) Data analysis

    b) Data name rationalization

    c) Data record standardization

    d) None of the above

15. Forward engineering is not necessary if an existing software product is producing the correct output.

    a) True

    b) False

16. Reengineering client/server systems begins with a thorough analysis of the business environment that encompasses the existing computing system.

    a) True

    b) False

17. The only time reengineering enters into work with a legacy system is when it components will be implemented as objects.

    a) True

    b) False

18. The cost benefits derived from reengineering are realized largely due to decreased maintenance and support costs for the new software product.

    a) True
    b) False

Chapter 37

1. Software process improvement must deliver a reasonable return-on-investment to justify its use.

    a) True
    b) False

2. An effective software process improvement effort relies on the same framework for each project.

    a) True
    b) False

3. The intent of a maturity model like CCM is to provide a road map to good software practice.

    a) True
    b) False

4. SPI is only justified for large software organizations.

    a) True
    b) False

5. The most difficult part of SPI is establishing a consensus for starting the process.

    a) True
    b) False

6. As process assessment is conducted which of the following issues should be focused on?

    a) Acceptance
    b) Commitment
    c) Consistency
    d) All of the above

7. Which of these individuals are not involved in the SPI education and training activities?
    a) Customers
    b) Manager
    c) Practitioners
    d) Stakeholders

8. It is often difficult to achieve consensus among different constituencies during the SPI selection and justification activity.
    a) True
    b) False

9. Which is not one of the processes that need to be considered during process installation and migration?
    a) As-is
    b) Here-to-there
    c) Just-in-time
    d) To-be
    e) a, b, d

10. Evaluation only occurs during the SPI post mortem activity
    a) True
    b) False

11. SPI often fails because risks were not properly considered and no contingency planning occurred.
    a) True
    b) False

12. The capability maturity model integration represents a meta model implemented as a
    a) Continuous model
    b) Staged model
    c) Theoretical model
    d) Both a and b

13. The people capability maturity model suggests practices that should be followed by an organization to attract, develop, and retain outstanding talent.
    a) True
    b) False

14. It is easy to determine the quantitative benefits and cost measures required to compute the return-on-investment for SPI activities.

    a) True

    b) False

15. To be effective in modern software development SPI frameworks must become significantly more agile.

    a) True

    b) False