第一部分

一、客观题

1：Testing effort can also be estimated using metrics derived from cylcomatic complexity.

A) True

B) False

2： Most testing metrics actually focus on the process of testing rather than the technical characteristics of the tests themselves.

A) True

B) False

3：Component-level metrics include measures of

A) complexity

B) coupling

C) module cohesion

D) performance

E) a, b, and c

4： If you encounter a class with a large responsibility (large class size or CS value) you should consider

A) making it a base class

B) making it a subclass

C) partitioning the class

D) starting a new class hierarchy

5： Because the class is the dominant unit in OO systems, relatively few metrics have been proposed for operations that reside within a class.

A) True

B) False

6： Most technical software metrics described in this chapter represent indirect measures of software attributes that are useful in the quantitative assessment of software quality.

A) True

B) False

7： In many cases metrics for one model may be used in later software engineering activities (e.g., design metrics may be used in test planning).

A) True

B) False

8：Which of the following is not a measurable characteristic of an object-oriented design?

A) completeness

B) efficiency

C) size

D) volatility

9：The IEEE software maturity index is used to provide a measure of the

A) maintainability of a software product based on its availability

B) relative age of a software product being considered for retirement

C) reliability of a software product following regression testing

D) stability of a software product as it is modified during maintenance

10： Interface metrics are used to assess the complexity of the module's input and output relationships with external devices.

A) True

B) False

11： Halstead's source code metrics are based on the number of

A) modules in the program

B) operands in the program

C) operators in the program

D) volume elements in the program

E) both b and c

12： Conformance to implicit requirements and customer expectations has no place in modern software quality assurance work.

A) True

B) False

13： The Goal/Question/Metric (GQM) paradigm was developed as a technique for assigning blame for software failures.

A) True

B) False

14： The function point metric is an example of metric that can be used to assist with technical decision-making based on the analysis model information, without making use of historical project data.

A) True

B) False

15： The specification metrics proposed by Davis address which two characteristics of the software requirements?

A) functionality and performance

B) performance and completeness

C) specificity and completeness

D) specificity and functionality

16： The depth of inheritance tree (DIT) metric can give an OO software designer a reading on the

A) attributes required for each class

B) completion time required for system implementation

C) complexity of the class hierarchy

D) level of object reusability achieved

17： Which measurement activity is missing from the list below?

FormulationCollectionAnalysisInterpretation

A) design

B) feedback

C) measurement

D) quantification

18： One of the most important attributes for a software product metric is that it should be

A) easy to compute

B) qualitative in nature
C) reliable over time
D) widely applicable

19： Which of these are reasons for using technical product measures during software development?

A) large body of scientific evidence supports their use
B) provides software engineers with an objective mechanism for assessing software quality
C) they allow all software quality information to be expressed unambiguously as a single number
D) all of the above

20：Software testing metrics fall into two broad categories

A) metrics that focus on defect removal effectiveness
B) metrics that focus on test coverage
C) metrics that estimate the duration of the testing process
D) metrics that predict the number of test cases required
E) both b and d

21： Which of the following is not one of three software product aspects addressed by McCall's software quality factors?

A) ability to undergo change
B) adaptability to new environments
C) operational characteristics
D) production costs and scheduling

22：Architectural design metrics focus on

A) architectural structure
B) data structural relationships
C) internal module complexity
D) module effectiveness
E) both a and d

23： The ISO 9126 quality standards for computer software are useful because they lend themselves to direct measurement of software attributes.

A) True
B) False

二、主观题

24：Describe the five activities associated with the software measurement process.

25：Technical testing metrics fall into two major categories. What are they?

26：List three characteristics of a good software metric.

27： Component-level design metrics focus on what three internal characteristics of software components?

28：Describe the role of class-oriented metrics in assessing the quality of an OO system.

第二部分

一、客观题

1：Which of the following are objectives for formal technical reviews?

A) allow senior staff members to correct errors

B) assess programmer productivity

C) determining who introduced an error into a program

D) uncover errors in software work products

2：Software safety is a quality assurance activity that focuses on hazards that

A) affect the reliability of a software component

B) may cause an entire system to fail

C) may result from user input errors

D) prevent profitable marketing of the final product

3：A review summary report answers which three questions?

A) terminate project, replace producer, request a time extension

B) what defects were found, what caused defects, who was responsible

C) what was reviewed, who reviewed it, what were the findings

D) none of the above

4：Quality costs may be divided into costs associated with

A) prevention, appraisal, and failure

B) people, process, and product

C) customers, developers, and maintenance

D) all of the above

5：Which of these activities is not one of the activities recommended to be performed by an independent SQA group?

A) prepare SQA plan for the project

B) review software engineering activities to verify process compliance

C) report any evidence of noncompliance to senior management

D) serve as the sole test team for any software produced

6：Attempts to apply mathematical proofs to demonstrate that a program conforms to its specifications are doomed to failure.

A) True

B) False

7：Statistical quality assurance involves

A) using sampling in place of exhaustive testing of software

B) surveying customers to find out their opinions about product quality

C) tracing each defect to its underlying cause, isolating the "vital few" causes, and moving to correct them

D) tracing each defect to its underlying causes and using the Pareto principle to correct each problem found

8：The ISO quality assurance standard that applies to software engineering is

A) ISO 9000:2004

B) ISO 9001:2000
C) ISO 9002:2001
D) ISO 9003:2004

9： The goal of quality assurance is to provide management with the data needed to determine which software engineers are producing the most defects.
A) True
B) False

10： Sample driven reviews only make sense for very small software development projects.
A) True
B) False

11： People who perform software quality assurance must look at the software from the customer\'s perspective.
A) True
B) False

12： There is no need to assess customer satisfaction when trying to determine the quality of a piece of software.
A) True
B) False

13： Poka-yoke devices are mechanisms that lead to the
A) creation of quality processes with minimal resources
B) determining causes of software defects
C) prevention of potential quality problems
D) rapid detection of quality problems introduced
E) both c and d

14： Six Sigma methodology defines three core steps.
A) analyze, improve, control
B) analyze, design, verify
C) define, measure, analyze
D) define, measure, control

15： At the end of a formal technical review all attendees can decide to
A) accept the work product without modification
B) modify the work product and continue the review
C) reject the product due to stylistic discrepancies
D) reject the product due to severe errors
E) both a and d

16： The purpose of software reviews is to uncover errors in work products so they can be removed before moving on to the next phase of development.
A) True
B) False

17： In any type of technical review, the focus of the review is on the product and not the producer.
A) True
B) False

18： A key concept of quality control is that all work products

A) are delivered on time and under budget
B) have complete documentation
C) have measurable specifications for process outputs
D) are thoroughly tested before delivery to the customer

19： Defect amplification models can be used to illustrate the costs associated with using software from its initial deployment to its retirement.
A) True
B) False

20：Variation control in the context of software engineering involves controlling variation in the
A) process applied
B) resources expended
C) product quality attributes
D) all of the above

21：Which of the following is not a section in the standard for SQA plans recommended by IEEE?
A) budget
B) documentation
C) reviews and audits
D) test

22：Software reliability problems can almost always be traced to
A) errors in accuracy
B) errors in design
C) errors in implementation
D) errors in operation
E) both b and c

23： Software quality might be defined as conformance to explicitly stated requirements and standards, nothing more and nothing less.
A) True
B) False

24： In general the earlier a software error is discovered and corrected the less costly to the overall project budget.
A) True
B) False

二、主观题

25：What is a poka-yoke device?

26：What is a formal technical review and why is one conducted? Outline the steps required to conduct a successful FTR?

27：Explain the difference between "quality of design" and "quality of conformance".

28：What is meant by the term “software reliability”?

第三部分

一、客观题

1：In building a WebE team strong team leadership is essential.

A) True

B) False

2： Business people lag considerably behind Web engineers in developing, collecting, and using metrics for WebApps.

A) True

B) False

3：Formulation and requirements gathering are distinct and different processes during WebE.

A) True

B) False

4： One of the things that distinguish the development of WebApps from other software products is the need to combine the work products from both technical and non-technical tasks into a single product.

A) True

B) False

5： During requirements gathering Web engineers should attempt to define the smallest reasonable number of user classes.

A) True

B) False

6：Developing WebApps in-house is no different than developing any other piece of software.

A) True

B) False

7：Which of these are goals for WebE requirements gathering?

A) Define user interaction scenarios

B) Determine performance constraints

C) Identify content requirements

D) Identify WebApp development tools

E) a, b, and c

8： Outsourcing WebApps is common practice, it is important to perform thorough analysis of the application and even create a rough design internally before selecting a vendor.

A) True

B) False

9： WebApps are extremely volatile, but this does not eliminate the need to understand the WebApp requirements.

A) True

B) False

10：Which of these is not one of the formulation questions asked during Web engineering?

A) What are the objectives for the WebApp?

B) What is the business need for the WebApp?
C) Who will use the WebApp?
D) Will you need to outsource development of the WebApp?

11：Which of these is not a category for WebE effort metrics?
A) application authoring
B) media authoring
C) page authoring
D) scenario authoring

12：Any team of experienced software engineers can develop WebApps.
A) True
B) False

13：Once formulation is complete Web engineering
A) is complete.
B) may be performed in-house.
C) may be outsourced.
D) both b or c

14：WebApps involve so little programming that formal testing is not needed before releasing the product to the users.
A) True
B) False

15：Which of these is not a goal for using metrics in WebE?
A) to provide basis for effort estimation
B) to provide basis for making personnel decisions
C) to provide indication of business success
D) to provide indication of technical quality

16：Which of these roles is not usually assigned to members of the WebE team?
A) content developer
B) marketing specialist
C) Web master
D) Web publisher

17：Which type of analysis is not conducted during the WebE process?
A) content analysis
B) functional analysis
C) user interaction analysis
D) market analysis

18：WebApps need to be built with such urgency that planning is not possible.
A) True
B) False

二、主观题

19：What types of analysis are conducted during the WebE process?

20：Describe the primary goals for using metrics in the context of Web engineering.

21： Describe the two basic options for performing Web Engineering once formulation is completed.

22：List the roles that need to be distributed among the WebE team members.