Questions

1. **Which of the following is NOT a software development methodology?**
   A) Waterfall model
   B) Agile model
   C) Spiral model
   D) Linear model
   E) All of the above are software development methodologies
2. **What is the purpose of requirements gathering in software engineering?**
   A) To determine the cost of the software
   B) To determine the schedule of the software
   C) To determine the resources required for the software
   D) To determine the user requirements for the software
3. **Which of the following is a software design principle?**
   A) Encapsulation
   B) Inheritance
   C) Polymorphism
   D) All of the above
4. **Which of the following is NOT a software testing technique?**
   A) Black box testing
   B) White box testing
   C) Gray box testing
   D) Green box testing
   E) All of the above are software testing techniques
5. **What is the main purpose of a software prototype?**
   A) To demonstrate the functionality of the software
   B) To obtain feedback from users
   C) To refine the user requirements
   D) All of the above
6. **What is the difference between verification and validation in software engineering?**
   A) Verification ensures that the software meets the user requirements, while validation ensures that the software is defect-free
   B) Verification ensures that the software is defect-free, while validation ensures that the software

meets the user requirements

C) Verification and validation are the same thing

D) Neither verification nor validation is a part of software engineering

7. **Which of the following is NOT a type of software maintenance?**
   A) Adaptive maintenance
   B) Corrective maintenance
   C) Perfective maintenance
   D) Creative maintenance
   E) All of the above are types of software maintenance

8. **Which of the following is a software development tool?**
   A) Version control system
   B) Integrated development environment
   C) Code editor
   D) All of the above

9. **What is the purpose of software documentation?**
   A) To help developers understand the software code
   B) To help users understand how to use the software
   C) To help maintainers understand how the software works
   D) All of the above

10. **What is the primary goal of software configuration management?**
    A) To improve the quality of the software
    B) To control changes to the software
    C) To ensure that the software is delivered on time
    D) To ensure that the software is defect-free

11. **What is the difference between software quality assurance and software quality control?**
    A) Quality assurance focuses on preventing defects, while quality control focuses on finding and fixing defects
    B) Quality assurance focuses on finding and fixing defects, while quality control focuses on preventing defects
    C) Quality assurance and quality control are the same thing

D) Neither quality assurance nor quality control is a part of software engineering

12. **Which of the following is NOT a software development process model?**
    A) Rational Unified Process
    B) Capability Maturity Model Integration
    C) Extreme Programming
    D) None of the above
13. **Which of the following is a software development metric used to measure software size?**
    A) Cyclomatic complexity
    B) Halstead complexity
    C) Lines of code
    D) McCabe complexity
14. **What is the purpose of a software requirements specification document?**
    A) To describe how the software will be tested
    B) To describe the design of the software
    C) To describe the implementation of the software
    D) To describe the user requirements for the software
15. **Which of the following is a software development methodology that emphasizes the importance ofcustomer collaboration?**
    A) Waterfall model
    B) Agile model
    C) Spiral model
    D) Linear model
16. **Which of the following is NOT a software design principle?**
    A) Abstraction
    B) Modularity
    C) Inheritance
    D) Encapsulation
    E) All of the above are software design principles
17. **Which of the following is NOT a type of software testing?**
    A) Regression testing
    B) Acceptance testing
    C) Functional testing
    D) Design testing
    E) All of the above are types of software testing
18. **Which of the following is a software development metric used to measure software maintainability?**
    A) Lines of code
    B) Halstead complexity
    C) Cyclomatic complexity
    D) Maintainability index
19. **What is the difference between black box testing and white box testing?**

A) Black box testing is used to test the user interface, while white box testing is used to test the code

B) Black box testing is used to test the code, while white box testing is used to test the user interface

C) Black box testing and white box testing are the same thing

D) Neither black box testing nor white box testing is a part of software engineering

20. What is the difference between verification and validation in software testing?

A) Verification checks that the software meets its requirements, while validation checks that the software is fit for its intended purpose.

B) Verification checks that the software is fit for its intended purpose, while validation checks that the software meets its requirements.

C) Verification and validation are the same thing.

D) Neither verification nor validation is a part of software testing.

21. What is the purpose of a software project plan?

A) To describe how the software will be designed

B) To describe how the software will be implemented

C) To describe how the software will be tested

D) To describe how the software development process will be managed

22. Which of the following is NOT a software development process model?

A) Waterfall model

B) Spiral model

C) Capability Maturity Model Integration

D) None of the above

23. What is the purpose of software testing?

A) To ensure that the software is defect-free

B) To verify that the software meets its requirements

C) To validate that the software is fit for its intended purpose

D) All of the above

24. **Which of the following is NOT a type of software maintenance?**
    A) Corrective maintenance
    B) Adaptive maintenance
    C) Perfective maintenance
    D) Preventive maintenance
    E) All of the above are types of software maintenance

25. **What is the difference between software requirements and software design?**
    A) Software requirements describe what the software should do, while software design describes how the software will do it.
    B) Software design describes what the software should do, while software requirements describe how the software will do it.
    C) Software requirements and software design are the same thing.
    D) Neither software requirements nor software design is a part of software engineering.

26. **Which of the following is a software design pattern that allows for object composition rather thaninheritance?**
    A) Factory method pattern
    B) Abstract factory pattern
    C) Composite pattern
    D) Decorator pattern

27. **What is the purpose of software configuration management?**
    A) To manage changes to the software during development
    B) To manage changes to the software after it has been released
    C) To manage the software development process
    D) To manage the software testing process

28. **Which of the following is NOT a software design principle?**
    A) SOLID
    B) DRY
    C) YAGNI
    D) TDD
    E) All of the above are software design principles

29. **Which of the following is a type of software maintenance that involves adding new features to thesoftware?**
    A) Corrective maintenance
    B) Adaptive maintenance
    C) Perfective maintenance
    D) Preventive maintenance
30. **What is software refactoring?**
    A) A process of making changes to software without affecting its external behavior
    B) A process of fixing defects in software
    C) A process of testing software to ensure that it works correctly
    D) A process of releasing software to the public
31. **Which of the following is NOT a category of software testing?**
    A) Functional testing
    B) Performance testing
    C) Security testing
    D) Maintenance testing
    E) All of the above are categories of software testing
32. **What is the purpose of software quality assurance?**
    A) To ensure that the software meets its requirements
    B) To ensure that the software is fit for its intended purpose
    C) To ensure that the software is free of defects
    D) All of the above
33. **Which of the following is NOT a software development life cycle model?**
    A) Waterfall model
    B) Spiral model
    C) Agile model
    D) RAD model
    E) All of the above are software development life cycle models
34. **Which of the following is a characteristic of a good software requirement?**
    A) Ambiguity
    B) Completeness
    C) Inconsistency
    D) Unverifiability
35. **What is the difference between white-box testing and black-box testing?**
    A) White-box testing is performed by the software developers, while black-box testing is performed by independent testers.

B) White-box testing is focused on the internal structure of the software, while black-box testing is focused on the external behavior of the software.

C) White-box testing is performed using automated testing tools, while black-box testing is performed manually.

D) White-box testing and black-box testing are the same thing.

36. Which of the following is NOT a characteristic of a good software design?

A) Loose coupling

B) High cohesion

C) High complexity

D) Modularity

37. What is a software requirement traceability matrix?

A) A document that lists all of the software requirements and their associated test cases

B) A tool used for version control of software code

C) A document that describes the software design

D) A document that traces the relationship between the software requirements and the various stages of development

38. Which of the following is NOT a software metric used for measuring software quality?

A) Cyclomatic complexity

B) Code coverage

C) Defect density

D) RAM usage

E) All of the above are software metrics used for measuring software quality.

39. What is the purpose of a software prototype?

A) To test the functionality of the software

B) To refine the software requirements

C) To demonstrate the software to stakeholders

D) All of the above

40. What is software configuration management?

A) A process of testing software to ensure that it works correctly

B) A process of managing changes to software artifacts

C) A process of developing software using agile methodologies
D) A process of documenting software requirements

41. What is a software process model?

A) A graphical representation of the software architecture
B) A set of steps that are followed during software development
C) A document that describes the software requirements
D) A tool used for automated testing

42. What is a use case diagram?

A) A diagram that shows the relationship between software requirements and the various stages of development
B) A diagram that shows the flow of control through a software system
C) A diagram that shows the internal structure of a software system
D) A diagram that shows the interactions between actors and the system in a specific use case

43. Which of the following is NOT a characteristic of good software documentation?

A) Completeness
B) Consistency
C) Clarity
D) Ambiguity

44. Which of the following is NOT a type of software maintenance?

A) Adaptive maintenance
B) Perfective maintenance
C) Corrective maintenance
D) Destructive maintenance
E) All of the above are types of software maintenance

45. What is software architecture?

A) The process of testing software to ensure that it works correctly
B) The process of developing software using agile methodologies
C) The design and organization of software components and subsystems

D) The process of documenting software requirements

46. What is a software development life cycle?

A) A set of steps that are followed during software development

B) A tool used for software project management

C) A document that describes the software requirements

D) A set of software engineering best practices

47. What is software quality assurance?

A) The process of testing software to ensure that it works correctly

B) The process of ensuring that software meets specified quality standards

C) The process of developing software using agile methodologies

D) The process of documenting software requirements

48. What is a software metric?

A) A measure of some property of the software system or its specification

B) A document that describes the software requirements

C) A tool used for software project management

D) A graphical representation of the software architecture

49. What is a software development methodology?

A) A specific algorithm used to solve a software engineering problem

B) A set of steps that are followed during software development

C) A document that describes the software requirements

D) A tool used for software project management

50. What is a software process model?

A) A graphical representation of the software architecture

B) A set of software engineering best practices

C) A document that describes the software requirements

D) A standard process for developing software

51. What is the purpose of software configuration management?

A) To document the software requirements

B) To test the software

C) To manage changes to the software throughout its development and maintenance

D) To develop software using agile methodologies

52. What is software engineering?

A) The process of developing software using agile methodologies

B) The process of testing software to ensure that it works correctly

C) The application of a systematic, disciplined, and quantifiable approach to the development, operation, and maintenance of software

D) The process of documenting software requirements

53. What is a software requirement?

A) A document that describes the software design

B) A measure of some property of the software system or its specification

C) A description of a function or feature that the software must provide

D) A graphical representation of the software architecture

54. What is the purpose of software testing?

A) To document the software requirements

B) To manage changes to the software throughout its development and maintenance

C) To ensure that the software meets specified quality standards

D) To develop software using agile methodologies

Answer Sheet

1	D	2	D	3	A	4	D	5	D	6	B	7	D	8	D	9	D
10	B	11	A	12	D	13	C	14	D	15	B	16	E	17	D	18	D
19	A	20	A	21	D	22	D	23	D	24	E	25	B	26	C	27	A
28	D	29	C	30	A	31	D	32	D	33	E	34	C	35	B	36	C
37	A	38	D	39	D	40	B	41	B	42	D	43	D	44	D	45	C
46	A	47	B	48	A	49	B	50	D	51	C	52	C	53	C	54	C