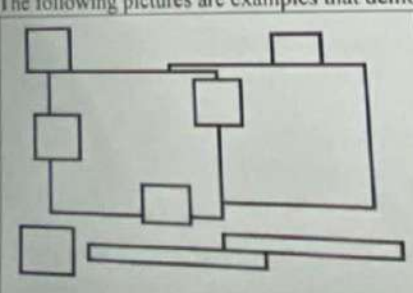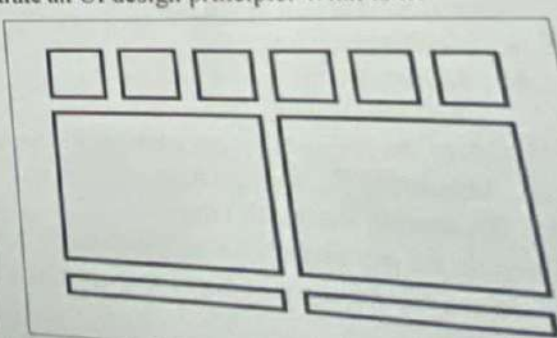Student Name: _____

Important Notes:

- This booklet includes 70 questions.
- The last page is the answer sheet.
- You MUST TRANSFER your answers to the answer sheet. Otherwise, your answers are INVALID.
- You MUST submit BOTH the question booklet and your answer sheet.

Multiple Choice

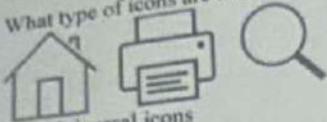Identify the letter of the choice that best completes the statement or answers the question.

____ 1. Which of the following is the first stage of TDD?
- a. Write code
- (b.) Write test
- c. Refactor
- d. Run test

____ 2. In TDD, what is the significance of writing a failing test?
- a. We should not write failing tests
- b. A failing test shows that the previous developer didn't do a good job
- c. A failing test shows that some code change is required to in our program
- d. A failing test gives you an opportunity to enhance code coverage

____ 3. In TDD, at what stage should you refactor your code?
- a. Whenever you like
- b. After writing a failing test case
- c. At the time of writing a test case
- d. After your code passes the test case

____ 4. What is the process of determining whether the products of a given stage fulfill the requirements established during the previous stage?
- a. Validation
- b. Auditing
- c. Verification
- d. Review

____ 5. Which choice most suitably describes agile the methodology?
- a. Improve the flexibility of software development by responding quickly to changes in user requirements
- b. Project is a sequence of phases, each depends on the deliverables of the previous one
- c. Prototypes with increasing functionality are developed
- d. Each phase is fully completed before advancing to the next phase

____ 6. Which is not an advantage of the waterfall process model?
- a. Increases reusability of components
- b. Straightforward to manage
- c. Clear structure
- d. Clearly documented

____ 7. Which is not a software analysis & design deliverable?
- a. Class diagram
- b. Use case diagram
- c. Data flow diagram
- d. Sample diagram

____ 8. A good software design must have higher _____ and lower _____.
- a. Cohesion, coupling
- b. Coupling, cohesion
- c. Fan-in, fan-out
- d. Dependency, complexity

____ 9. The following pictures are examples that demonstrate an UI design principle. What is it?

- a. Layout consistency
- b. Real-world consistency
- c. Layout alignment
- d. Navigability

_____ 10. What type of icons are the following icons?

    c. Icons with conflicting meanings
    d. Navigational icons

a. Universal icons
b. Unique icons

_____ 11. Look at the following examples of icons positioning and choose a statement that is against the recommended UI design practice?

My Expenses

Food	6,200	✓
Clothes	20,000	!
Entertainment	5,800	✓
Fuel	650	👍
Travel	360	☺

LEGEND

☺	< 500	AWESOME!
👍	500 ~ 5,000	Not bad!
✓	5,000 ~ 10,000	Acceptable
👎	10,000 ~ 15,000	Poor
!	> 15,000	TERRIBLE!

a. Subject icon should appear at the end of line
b. Status icon should appear at the end of line

c. Subject icon should appear at the beginning
d. Status icon could appear anywhere

_____ 12. Following is an example UI design problem. Which design problem is indicated?

Discovery | Basic |

Discovery
Place Name:
Approved For Publication: ☑
Discoverable: ☐
North Bounding Latitude: 0
South Bounding Latitude: 0
East Bounding Longitude: 0

a. Misaligned elements
b. Poorly rendered elements

c. Inconsistent sizes
d. Inconsistent labels

_____ 13. What is a test?
a. A measure to check if the code meets the defined specifications
b. A measure to check if the code is visually beautiful

c. A measure to check if the code contains security vulnerabilities?
d. A measure to increase code coverage

_____ 14. The goal of testing is?
a. Let the customers to detect the errors
b. Find errors before the customers find it

c. Allow the developers to detect the errors
d. Allow the administrators to find the errors

_____ 15. What is NOT a goal of testing?
a. To detect defects
b. To increase the confidence about a program's quality

c. To prevent defects
d. To analyze the causes of defects

_____ 16. Which of the following is not a part of Performance Testing?
a. Measuring Transaction Rate
b. Measuring Response Time

c. Measuring the LOC
d. None of the above

_____ 17. When do we say that a test case has passed?
a. When the test case executes without any error
b. When the test case executes and an output is produced

c. When the test case executes and output produced matches the expected output.
d. When the test case executes and output produced can be traced to a requirement

_____ 18. A set of inputs, execution preconditions and expected outcomes is known as a...

2

b. False

36. Each input is tested directly on, above, or beneath the edges of its valid range. Which black-box testing technique is it?
   a. Boundary-value analysis
   b. Equivalence partitioning
   c. Error guessing
   d. Decision table testing

37. An input field takes the user age to identify his/her age group to be one of: kid (< 13), teenager (13 to 1 adult (19 to 39), middle aged (40 to 59) and elder (60+). How many equivalence partitions are there?
   a. 4
   b. 5
   c. 7
   d. 8

38. An input field takes the year between 1900 and 2022 as input, the boundary values for testing this field are?
   a. 1899, 1900, 2022, 2023
   b. 1899, 1901, 2021, 2023
   c. 1900, 1950, 2000, 2050
   d. 1850, 1900, 1950, 2000

39. A function to calculate an employee's end-year reward has the following specification:
   • If work time is less than 2 years, reward is 1 million
   • If work time is from 2 to less than 5 years, reward is 2 million
   • If work time is from 5 to 10 years, reward is 3 million
   • If work time is more than 10 years, reward is 5 million
   To test this function using equivalence partitioning technique, the minimum number of test cases is?
   a. 3
   b. 4
   c. 5
   d. 6

40. What do we measure with code coverage metrics?
   a. Number of defects
   b. Number of test cases
   c. Testing efficiency
   d. Testing efforts

41. Which type of coverage is easiest to achieve?
   a. Statement coverage
   b. Decision/branch coverage
   c. Condition coverage
   d. Path coverage

42. Which type of coverage is generally most difficult to achieve?
   a. Statement coverage
   b. Decision/branch coverage
   c. Condition coverage
   d. Path coverage

43. Which of the following statements is true about Statement Coverage?
   a. It is the percentage of executed test cases
   b. It is the percentage of statements of a program which have been executed
   c. It is the percentage of statements which have passed some test case
   d. It is the percentage of statements which are covered

44. Which of the following statements is true about the relationship between statement coverage and branch coverage?
   a. 100% branch coverage implies 100% statement coverage
   b. 100% statement coverage implies 100% branch coverage
   c. 50% branch coverage implies 50% statement coverage
   d. Branch coverage cannot reach 100%

45. Which of the following statements is most correct about source code review?
   a. We use checklist to identify source code issues
   b. We execute the program manually to find defects
   c. We use flow graph to detect source code problems
   d. We compare source code to specifiation to find problems

46. A = 8;
    if (A<35 || A>200)
    {
    A = A + 10;
    A = A +20;
    A = A * 20;
    }
    print(A);
    What is the statement Coverage?
       A. 100%
       B. 4
       C. 75%

4

```
A = A * 20;
}
print(A);
```
What is the statement Coverage?
a. 100%
b. 40%

c. 75%
d. 25%

48.
```
A = 199;
if (A<35 || A>200)
{
A = A + 10;
A = A + 25;
}
A = A * 20;
print(A);
```
What is the statement Coverage?
a. 100%
b. 40%

c. 60%
d. 25%

49.
```
A = 200;
if (A<35 || A>200)
{
A = A + 10;
A = A +20;
A = A * 20;
}
print(A);
```
What is the statement Coverage?
a. 100%
b. 40%

c. 60%
d. 25%

50.
```
A = 201;
if (A<35 || A>200)
{
A = A + 10;
A = A +20;
A = A * 20;
}
A = A + 200;
print(A);
```
What is the statement Coverage?
a. 100%
b. 40%

c. 75%
d. 25%

51. For sequence Diagram, the vertical axis represents the participating objects.
a. True
b. False

52. For sequence Diagram, the horizontal axis represents the time.
a. True
b. False

53. For sequence Diagram, ... is time during which an object exits
a. Objects
b. Lifeline
c. Messages

54. ... identifies test cases based on software specification.
   a. Black-box testing
   b. White-box testing
   c. System testing

55. ... identifies test cases from reading source code
   a. Black-box testing
   b. White-box testing
   c. Integration testing

56. ... done by programmers during implementation to find errors/bugs
   a. Development testing
   b. Release testing
   c. User testing
   d. Performance testing

57. ... done by tester to check for conformance to requirements.
   a. Development testing
   b. Release testing
   c. User testing
   d. Performance testing

58. A mistake made by a person while coding, documenting...
   a. Error
   b. Fault
   c. Failure
   d. Incident

59. Something that happens when a bug executes:
   a. Failure
   b. Fault
   c. Security Testing
   d. A/B Testing

60. Test is a set of inputs and expected outputs which is associated to a program behavior.
   a. True
   b. False

61. Boundary Value Analysis is not suitable for Boolean values.
   a. True
   b. False

62. A unit test focuses on...
   a. One class
   b. One system
   c. One error
   d. One failure

63. A single unit is not tested in isolation from all others
   a. True
   b. False

64. Techniques to identify test case include:
   a. Equivalence partitioning
   b. Boundary Value Analysis
   c. Decision Table – Based Testing
   d. Path code testing

65. User testing is one by...
   a. Users
   b. Tester
   c. Programmer
   d. Developer

66. Performance testing is ...
   a. to measure responsiveness and reliability under workload
   b. Test system reliability under heavy workload
   c. Check if the user interface is easy to use and understand

67. Test under different environments to ensure compatibility with other software applications, operation systems, or hardware.
   a. Regression Testing
   b. Security Testing
   c. Compatibility Testing
   d. Performance testing

68. Incident is not the symptom which alerts user the existence of a fault.
   a. True
   b. False

69. What are Garvin's quality dimensions?
   a. Performance Quality
   b. Feature quality
   c. Durability
   d. Security

70. What are McCall's quality factors?
   a. Correctness.
   b. Reliability.
   c. Performance.
   d. Stability.

THE END