

**Full Term Subject**  
**Systems Integration and Architecture 1**  
**Midterm Examination**

Name: \_\_\_\_\_

Student Number: \_\_\_\_\_

Course: \_\_\_\_\_

Subject: \_\_\_\_\_

Integrity is one’s refusal to cheat.  
My actions define my character.

\_\_\_\_\_  
Name and Signature of Student

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A. MULTIPLE CHOICE. Choose the best answer based on the statements provided. (20 points)

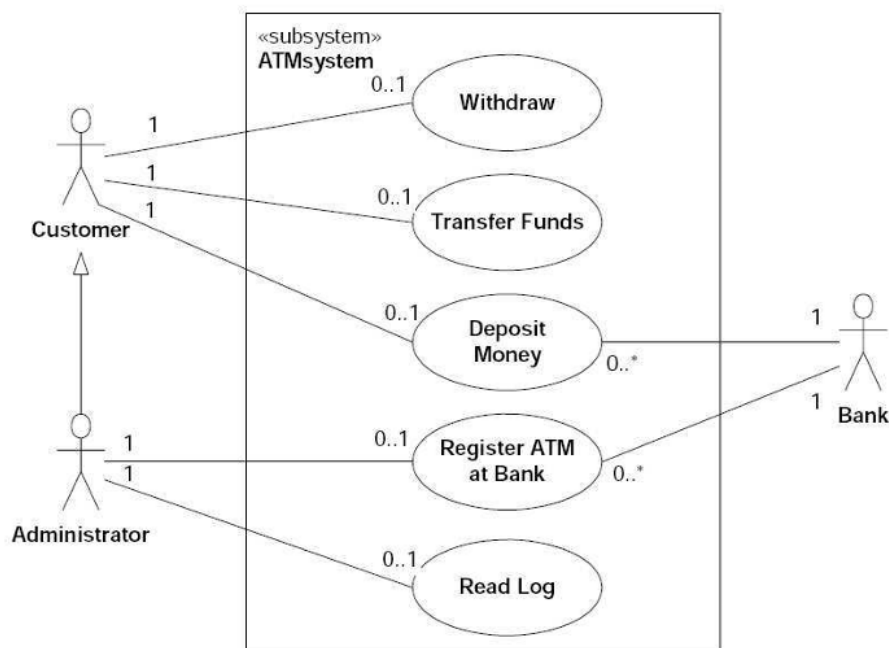
1. Use case description consists of the following...
  - A. Actors
  - B. Number and Use case name
  - C. Need and stakeholder
  - D. All of the above
2. Select the true statement from the following.
  - A. The first condition is has guaranteed to be true if the activity finishes
  - B. The next or post-condition is guaranteed to be true if the activity begins
  - C. Trigger is an event that is used to give a start to a use case to begin.
  - D. Both a and b
3. Select the true statement for the use case description format.
  - A. Underline text indicates to another use case
  - B. Extensions section utilize a complex numbering scheme
  - C. Indentation is used in a line to bring extensions easy to read
  - D. All of the above
4. A UML Diagram that facilitates the requirements gathering and interacts between the system and external users.
  - A. Flowchart
  - B. Use Case
  - C. Sequence Diagram
  - D. Data Flow Diagram
5. A Use Case is depicted graphically by the following system:
  - A. Square
  - B. Rectangle
  - C. Circle
  - D. Oval
6. Select the best name for a use case from the following options:
  - A. Enroll Student
  - B. Student
  - C. Enrollment
  - D. EnrollStudent()
7. Which template below would be best suited to name actors:
  - A. [verb]
  - B. [adverb]
  - C. [noun]
  - D. [noun][verb]
8. UML is not a programming language; it is rather a visual language.
  - A. True
  - B. False
9. Use case modelling is an \_\_\_\_\_ process that enables users of a system to have input into the requirements gathering process in such a way that does not require them to have technical

- knowledge and expertise outside of the role that they play in the organization or system being modelled. What is the missing word in the sentence above?
- A. Waterfall
  - B. Definitive
  - C. Iterative
  - D. Incremental
10. Which of the following outlines the structure of a typical use case in the usual order?
- A. Assumptions, pre-conditions, post-conditions, flow
  - B. extends, generalizes, includes, packages
  - C. Description, pre-conditions, main flow, alternative flows, exceptions, post-conditions
  - D. Actors, boundaries, cases, interactions
11. Which type of diagram is Activity diagram?
- A. Structural Diagram
  - B. Behavioral UML Diagrams
  - C. Both of these
  - D. None of these
12. Which of the following statement is true concerning objects and/or classes?
- A. An object is an instance of a class.
  - B. A class is an instance of an object.
  - C. An object includes encapsulates only data.
  - D. A class includes encapsulates only data.
13. An object can have which of the following multiplicities?
- A. Zero
  - B. One
  - C. More than one
  - D. All of the above.
14. Multiplicity is the same as what concept for an ERD?
- A. Relationship
  - B. Attribute
  - C. Entity
  - D. Cardinality
15. \_\_\_\_ testing technique is used for testing software against its specifications with no knowledge of its internal working as well.
- A. White -box
  - B. Black-box
  - C. Correctness
  - D. Grey-box
16. In an activity diagram, the start state is represented as a \_\_\_\_ and an end state as a \_\_\_\_.
- A. Hollow circle, Hollow circle enclosing a smaller colored circle
  - B. Small darkened circle, Hollow circle enclosing a smaller colored circle
  - C. Hollow circle enclosing a smaller colored circle, Small darkened circle
  - D. Small darkened circle, a Colored circle enclosing a smaller hollow circle
17. Activity Diagrams plotted horizontally refers to a business process.

- A. True
  - B. False
18. A \_\_\_ is defined as a group of objects with the same structure and behavior.
- A. Association
  - B. Polymorphism
  - C. Class
  - D. Method
19. \_\_\_ relationship is indicated by a dashed line beginning at the base use case and ending with an arrow pointing to the use case.
- A. Communication
  - B. Uses
  - C. Extends
  - D. Association
20. \_\_\_ is a creative activity to recognize and understand the problem, its related constraints, and the methods of overcoming those problems.
- A. Analysis
  - B. Implementation
  - C. Design
  - D. Testing

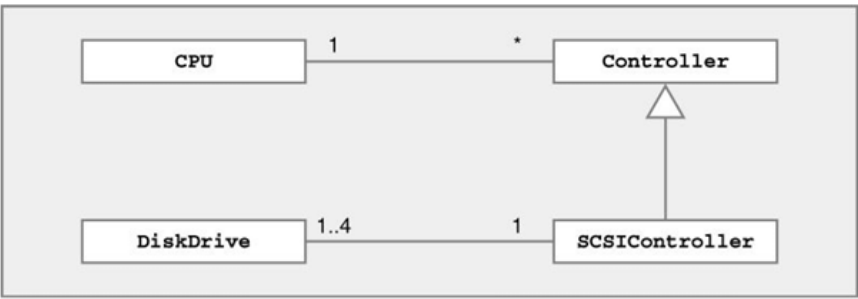
II. SIMPLE Q&A. Answer the following questions accurately and concisely.

A. Based on the Use-Case Diagram provided:

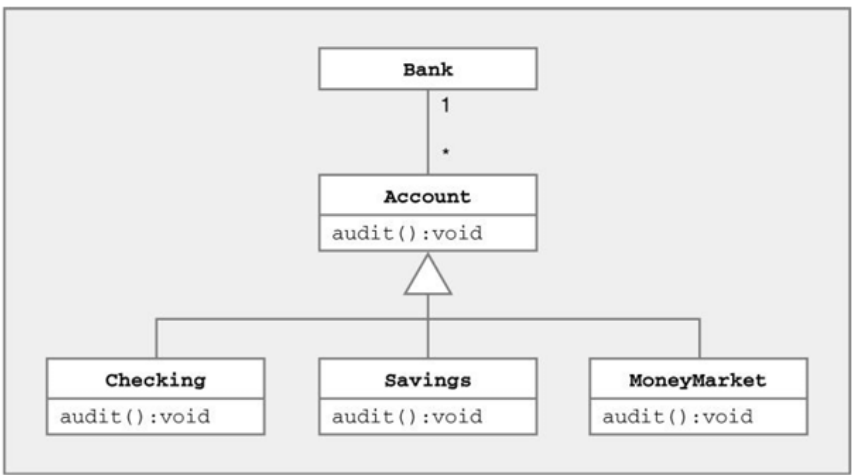


- 21. What/who are the actors? [3 points]
- 22. Identify the Use-Cases in the Diagram. [5 points]
- 23. Which use-case have at least 2 actors interacting? [2 points]

B. Explain the Class Diagram as complete as possible: [5 points]



C. Explain the Class Diagram as accurate as possible: [5 points]



D. Convert the activity diagram as a pseudocode. [10 points]

