

MULTIPLE CHOICE

Choose the one best answer.

1. Many projects using Agile methods use time-boxed development for project management. Time-boxed development is best described as:

- a. Intensive project management to ensure we deliver on time.
- ☒ b. Establishment of hard milestones that ensure we are on schedule.
- c. Breaking the project into pieces and using iterative development.
- d. Always delivering something to the customer on-time, even if we cut functionality.

2. Iterative development is characterized by:

- a. Completing all design up front before starting any development.
- ☒ b. Dividing the project into smaller pieces that are completed as mini-projects.
- c. Following the waterfall model of development.
- d. Fully detailing all the use cases before starting an iteration.

3. Which of the following is **not** true about use cases:

- a. They specify interactions between external actors and the system.
- ☒ b. They detail how the system internals will actually operate.
- c. They describe what has to true for the use case to execute
- d. They describe key stakeholders and their goals.
- e. All the above are true

4. In SCRUM, the product backlog contains all the following except:

- a. A prioritized list of all the features the application will have.
- ☒ b. The hours that have been worked on each feature
- c. The hours left to work on each feature
- d. The total hours left to work on the entire project
- ☒ e. All the above are true.

5. In SCRUM, the sprint backlog contains all the following except:

- a. A list of all the tasks that are scheduled for this sprint.
- b. The name of the person responsible for each task.
- c. The hours left to work on each task
- ☒ d. The hours actually completed for each task.
- e. All the above are true

6. Automated build tools like Gradle are important because:

- a. They allow the team to perform all tasks related to build and deployment with only one command.
- b. They minimize the configuration requirements for new team members.
- c. They allow automated runs of tests and deployment
- ☒ d. All the above are true
- e. None of the above are true

7. Source control systems like Git are important because:

- a. They allow multiple team members to modify files
- b. They provide access to the current code base for everyone on the team
- c. They automatically resolve any conflicts in file versions.
- d. They allow the creation of different versions of the application through branching.
- ☒ e. All but c are correct

8. Android is:

- a. A brand of phone
- ☒ b. An operating system
- c. A programming SDK for phones
- d. An activity

9. The best way to design any software application is through the use of Object-Oriented techniques

- ☒ a. True
- ☐ b. False

10. Which of the following was not a key player in the development of early OO theory?

- a. Alan Kay
- b. Simula
- c. Sketchpad
- ☒ d. Java Language

11. Which of the following is not a characteristic of an object?

- a. It knows things
- b. It does things
- c. It collaborates with other objects
- d. It makes decisions
- ☒ e. All the above are characteristics

12. Which of the following is the best use case title?

- ☒ a. User logs into the system
- b. System authenticates user
- ☒ c. Authenticate User
- d. User gains access to the system

13. The first step of the Main Success scenario is:

- a. The trigger event
- b. Something the external actor does
- c. The thing that kicks off the whole chain of events
- ☒ d. All the above are correct
- e. None of the above are correct

14. The Main Success scenario should:

- a. Contain the path which has no exceptional conditions occurring
- b. Detail the interactions between the User and the System
- c. Contain alternative descriptions when the user has an option
- d. Both a and b are correct.

15. Fred, your new UGA intern, has completed a use case description and you are tasked to review it.

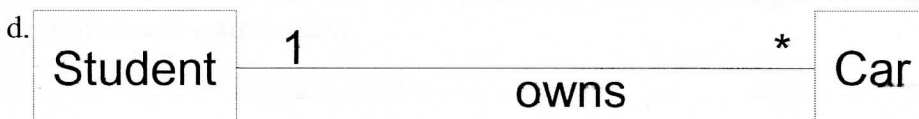
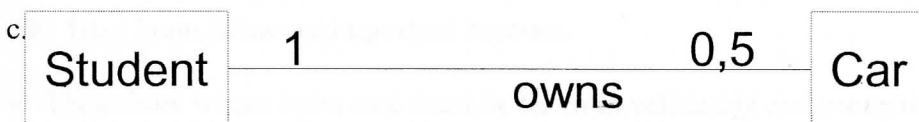
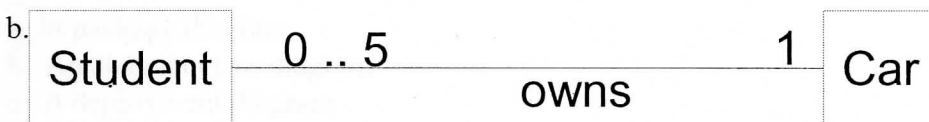
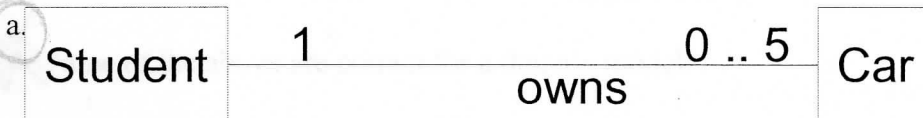
It looks like : 1. User types their name into a JTextField and presses the OK button
2. System builds a SQL query and sends it to the User table.

- a. You congratulate Fred on a good use case
- b. You accept step 1, but step 2 needs to specify what kind of query is needed
- c. You accept step 2, but step 1 needs to specify that it is a JButton
- d. You reject both steps as too implementation focused.

16. You brainstorm a list of classes for an inventory management system. You are ready to start filtering them. Which of the following looks like a good candidate list for the domain model?

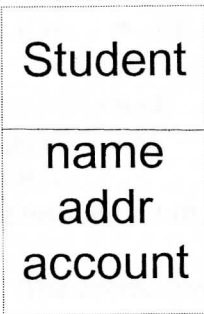
- a. Inventory, Item, Database, StatusWindow
- b. Inventory, Item, BarCode Device, Scanner
- c. Inventory, Item, ReorderReport, Manufacturer
- d. Item, ReorderReportScreen, Manufacturer, BarCode

17. You are preparing a domain model for the GT parking system. According to GT regulations, a student may own no car, or up to 5 cars. Which of the following is correct?

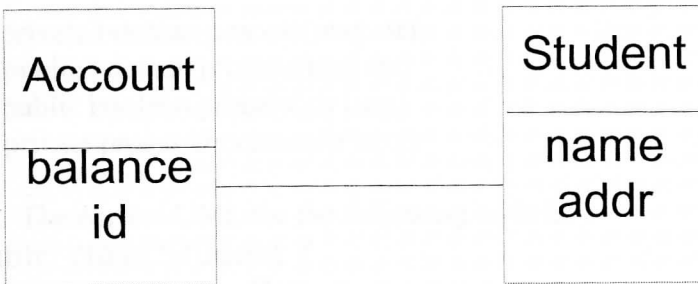


18. Which of the following is the best representation for student in the domain model

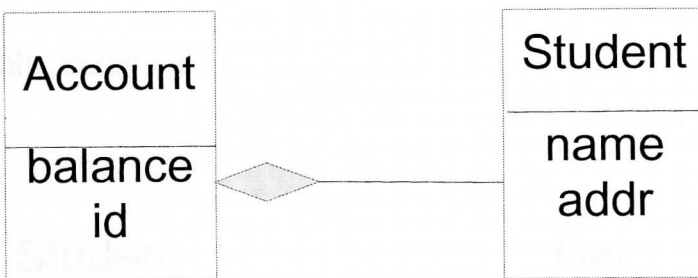
a.



b.



c.



d.

None of the above are correct for a domain model.

19. A software conceptual or logical architecture is most often presented in UML as

- a. A package diagram
- b. An abstract class diagram
- c. A deployment diagram
- d. A system sequence diagram

20. Trust boundaries are important because:

- a. They show where extra care must be taken in validating and protecting data
- b. They show vulnerabilities to hackers
- c. They show where defensive programming techniques might NOT be required.
- d. Both a and c are correct

21. You have been given the job of implementing a class in a UML diagram. You look at the attribute and it is: `# id : int`. Your java code should look like:

- a. `private int id;`
- b. `public int id;`
- c. `int id;`
- d. `protected int id;`

22. The correct java code for `+ process (str : msg) : boolean` is:

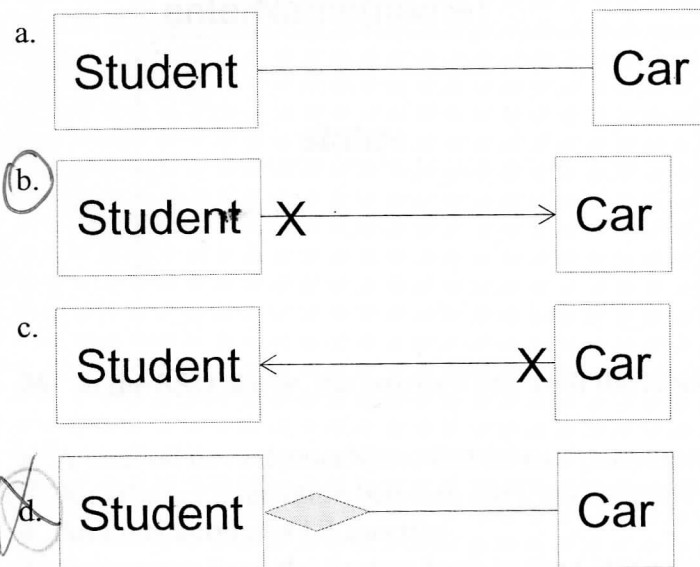
- a. `private boolean process(msg str)`
- b. `public boolean process(msg str)`
- c. `public boolean process(str msg)`
- d. `private process boolean(str msg)`

23. The correct UML for the following code is:

```
public class Student {  
    private Car myCar;  
}
```

```
public class Car {
```

```
}
```



*Student knows about car,
but car knows nothing about student*

23. In your UML model, you want to show that `MAX_LIVES` is a constant integer class variable with a value of 10. Which of the following UML descriptions is correct?

- a. `+ MAX_LIVES : int = 10 {static}`
- b. `+ MAX_LIVES : int = 10 {readonly}`
- c. `+ MAX_LIVES : int = 10 {static, final}`
- d. `+ MAX_LIVES : int = 10 {readonly}`

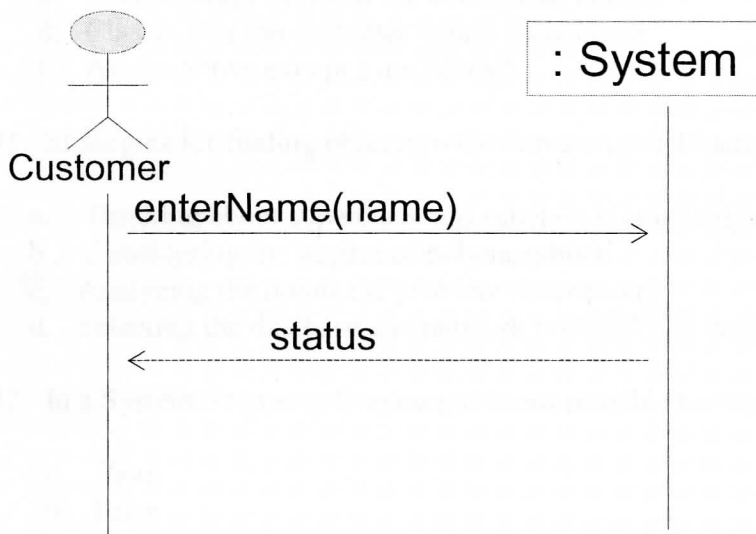
24. In strict Model-View-Presenter style which of the following statements are true?

- a. The Model holds all the application data, and is isolated from the rest of the application through a general interface.
- b. The View holds all the user interface code and is isolated from the rest of the application through a general interface.
- c. The Presenter holds most of the business interaction logic and event handling code. It uses the view interface and the model interface to do its job.
- ☒ d. All the above statements are true
- e. None of the above statements are true

25. Which of the following is not a valid architectural style:

- a. Layered
- b. Blackboard
- c. Pipe and Filter
- ☒ d. Command

The next questions deal with this System Sequence Diagram (SSD).



26. In the SSD above, the arrowed line with the label enterName represents:

- a. A method named enterName that takes a parameter name.
- ☒ b. An abstract interaction between the Customer and System where the customer enters their name
- c. An invocation of a UI function.
- d. A response from the System back to the Customer.

27. In the SSD above, the arrowed line with the label status represents:

- ☒ a. A response from the System back to the customer
- b. A message from the Customer to the System
- c. A message from the System to the customer
- d. An optional message from the System to the customer

28. In UML, an actor is:

- a. Something with behavior, such as a person, computer system or organization.
- b. Only the human users
- c. Something outside the system we are building
- d. All of the above
- ☒ e. Only a and c are correct

29. In UML, the three kinds of actors are:

- ☒ a. Primary, Supporting and Offstage
- b. Action Hero, Anime Star and Drama Queen
- c. Computer, Human and Paper-Based
- d. Principal, Secondary and Tertiary

30. The Domain Model contains:

- a. All the required classes for the implementation
- b. Real-World Conceptual classes
- c. Relationships between the conceptual classes
- d. Classes that the customer would understand
- ☒ e. All the above except a are correct

31. Strategies for finding objects in the domain model include:

- a. Thinking about superclass and subclass relationships
- b. Considering the impact of polymorphism
- ☒ c. Analyzing the nouns the problem description
- d. Selecting the database and network protocol you will use for the implementation

32. In a System Sequence Diagram, it is not possible to show loops or alternative flows of a scenario.

- a. True
- ☒ b. False

MATCHING (3 Points Each)

Select the one best answer. Answers may be used more than once or not at all.

<u>D</u> Creating a class to manage all the parts of an email message, like the header, body and attachments.	A. Information Holder
<u>F</u> Creating a class to provide an API for accessing a database.	B. Controller
<u>C</u> Creating a class to monitor the alarm sensors every 4 seconds.	C. Coordinator
<u>E</u> Creating a class to play music in the background	D. Structurer
<u>B</u> Creating a class that adjusts the speed of a conveyor belt by analyzing the number of items passing by over time	E. Service Provider
<u>A</u> Creating a class to manage the data associated with a Customer	F. Interfacer
<u>A</u> My primary responsibility is to know things	G. Executor
<u>E</u> My primary responsibility is to do things	H. Data Object
<u>F</u> My primary responsibility is to connect one part of the system to another	
<u>D</u> My primary responsibility is to organize other objects into a single component	
<u>C</u> X My primary responsibility is to make decisions based on static rules	
<u>B</u> X My primary responsibility is to make decisions based on dynamic rules	