MULTIPLE CHOICE

1. The practice of data hiding serves which of the following purposes:
   a. it enhances the security of the object's data
   b. it makes the interface cleaner
   c. it keeps the attributes of an object separate from the object's methods
   d. all of the above are purposes of data hiding
   ANS: A

2. The expression `Write Cook.pancakes` refers to:
   a. an object named `Cook` with a member named `pancakes`
   b. an object named `pancakes` with a member named `Cook`
   c. an object named `Cook` and a method named `pancakes`
   d. an object named `Cook` and an attribute named `pancakes`
   ANS: A

3. Which of the following is not part of the analysis phase of developing an OOP program?
   a. identifying the classes to be used
   b. determining the attributes needed for the classes
   c. determining the methods needed for the classes
   d. determining the relationships among the classes
   e. all of the above are parts of the analysis phase
   ANS: E

4. Which of the following is an attribute of a class named `Triangle`?
   a. `SetBase` (assigns a value to the measurement of the base of a triangle)
   b. `SetHeight` (assigns a value to the measurement of the height of a triangle)
   c. `Area` (the area of a triangle)
   d. `GetArea` (returns the area of a triangle to the calling module)
   ANS: C

5. Given that you have a class named `Dog`. How would you create two objects of the class `Dog` named `Labrador` and `Poodle`?
   a. `Write Labrador, Poodle As Dog`
   b. `Declare Labrador.Dog, Poodle.Dog`
   c. `Declare Labrador, Poodle As Dog`
   d. `Declare Dog.Labrador, Dog.Poodle`
   ANS: C
6. Given that you have an object, **Terrier**, of the class **Dog**, and that an attribute of this class is **Color**, how would you refer to the **Color** attribute of the **Terrier** object?
   a. `Terrier.Color`
   b. `Dog.Terrier.Color`
   c. `Terrier.GetColor`
   d. `Call Dog.Terrier.GetColor`
   **ANS:** A

7. Which of the following programming languages are not procedural languages?
   a. C++
   b. BASIC
   c. FORTRAN
   d. all are procedural languages
   **ANS:** A

8. To support object-oriented programming, a programming language must include which of the following features?
   a. encapsulation
   b. inheritance
   c. polymorphism
   d. all of the above
   **ANS:** D

9. If a class named **Sedan** has all the attributes and methods of a class named **Vehicle**, but has several other attributes and methods specific only to **Sedan**, then:
   a. **Sedan** is the parent class and **Vehicle** is the base class
   b. **Vehicle** is the parent class and **Sedan** is the child class
   c. **Sedan** is the base class and **Vehicle** is the parent class
   d. **Vehicle** is the derived class and **Sedan** is the base class
   **ANS:** B

10. From a programming point of view, in a GUI interface, windows are:
    a. events
    b. objects
    c. classes
    d. rectangles
    **ANS:** B

11. Which of the following actions determine the flow of execution in an event-driven program?
    a. a mouse click
    b. the state of a timer
    c. a key press
    d. all of the above are actions that determine the flow of execution
    **ANS:** D
12. Which method would you use to respond to data after it is typed into a text box?
   a. Click  
   b. Visibility  
   c. Change  
   d. Check  
   ANS: C

13. What is a constructor in a class?
   a. an object  
   b. a list of an object’s attributes  
   c. an instance of the class that has private methods  
   d. a special method that can be used to create objects of the class  
   ANS: D

14. Which of the following GUI objects is most commonly used to allow the user to initiate an action?
   a. text box  
   b. label  
   c. command button  
   d. list box  
   ANS: C

TRUE/FALSE

1. True/False: The attributes of an object are the operations that may be applied to it.  
   ANS: F

2. True/False: An object is a particular instance of its class.  
   ANS: T

3. True/False: The practice of data hiding helps shield the inner workings of the object from the programmer.  
   ANS: T

4. True/False: Attributes of a class that are available to code outside that class are public so long as the methods of the class are not available to code outside the class.  
   ANS: F

5. True/False: If one member of a class is private, all the members of that class must also be declared as private.  
   ANS: F

6. True/False: To refer to an object and one of its methods, we use dot notation.  
   ANS: T

7. True/False: A constructor in a class is a special method that can be used to create objects of that class.  
   ANS: T
8. True/False: Encapsulation is the ability to create methods that perform a general function which automatically adopts itself to work with objects of different classes.
   ANS: F

9. True/False: When a subclass is created, it is known as the base class.
   ANS: F

10. True/False: Polymorphism allows a method to take on many definitions when applied to objects in a hierarchy of classes.
    ANS: T

12. True/False: An object modeling language is a standardized set of symbols that includes ways to arrange the symbols to model parts of an object oriented software design.
    ANS: T

13. True/False: When a user clicks a label in a GUI interface, an action is initiated.
    ANS: F

14. True/False: All the controls in a GUI interface have the same properties, although they may have different methods.
    ANS: F

15. True/False: The first step in the analysis phase of developing an event-driven program is to identify the windows needed in the program.
    ANS: T

SHORT ANSWER

1. A(n) ________ is a data type that allows a programmer to create objects.
   ANS: class

2. Objects are made up of data and operations on that data, so we say that an object ________ data and operations.
   ANS: encapsulates

3. An object’s data is known as its ________ or properties.
   ANS: attributes

4. Attributes and/or methods of a class that are available to code outside that class are ________.
   ANS: public

5. The ________ operation creates an instance of a class.
   ANS: instantiation

6. The expression **Write Triangle.Height** refers to an object named ________.
   ANS: Triangle

7. An object’s attributes are initialized, in an OOP language, through the use of a(n) ________.
   ANS: constructor
8. The ability to create new classes based on existing classes is known as __________.
   ANS: inheritance

9. When a subclass is created, the __________ and __________ of the parent class 
   automatically become members of the child class.
   ANS: attributes, methods

10. UML, or Unified Modeling Language, is a type of __________ __________ language that is 
    used to create an abstract model of a system.
    ANS: object modeling

11. The buttons, boxes, and other elements of a GUI are known as window __________.
    ANS: components

12. Properties of a GUI control that are used automatically unless new ones are assigned are the 
    __________ values.
    ANS: default

13. When the actions of a user (such as clicking a mouse or pressing a key) determine the flow 
    of execution of a program, that program is said to be __________ __________.
    ANS: event driven

14. In an event driven program, execution begins by displaying the program’s initial window and 
    running its __________ procedure.
    ANS: startup

15. When a user clicks a command button during program execution, that action is considered to 
    be a(n) __________.
    ANS: event