**Wilbur Wright College**

**CIS 142 C# Programming**

*Questions Bank*

1. The purpose of the Visual Studio 2008 IDE is to

a) create a program.

b) run a program.

c) debug a program.

d) All of the above.

Answer: d

2. By default, the Visual Studio 2008 IDE assigns this name to a new Windows Forms

project:

a) NewProject1

b) WindowsFormsApplication1

c) NewProject

d) MyProject

Answer: b

3. If the Solution Explorer is not shown, select \_\_\_\_\_\_\_\_\_\_.

a) View > Solution Explorer  
b) File > Solution Explorer  
c) Edit > Solution Explorer  
d) Tools > Solution Explorer

Answer: a

4. The Properties window  
a) allows you to modify control’s properties without writing any code.  
b) displays a control’s information.  
c) has the same set of options for every control.  
d)a and b   
e)a and c

Answer: d

5. Applications that contain only text output are referred to as .

a) text applications

b) console applications

c) simple applications

d) None of the above.

Answer: b

6. A single line comment in C# begins with:

a) \*/

b) #

c) //

d) \\

Answer: c

7. The starting point of a C# program is the           method.

a) Main

b) Start

c) Open

d) None of the above.

Answer: a

8. All statements in C# must end with:

a) :

b) ;

c) #

d) .

Answer: b

9. What does IntelliSense help you do?  
a) Detect errors  
b) Simplify writing code

c) Compile your code  
d) a and c

Answer: b

10. Where can’t you see errors?  
a) The line where the error occurred  
b) The Error List window  
c) The Solution window

d) The Command Prompt window

Answer: c

11. What do the following lines print?

Console.Write( “Welcome to ” );

Console.WriteLine( “C# Programming!” );

a) Welcome to

C# Programming!  
b) Welcome to C# Programming!

c) Welcome to  
 C#  
 Programming!  
d) Welcome  
 to  
 C#  
 Programming!

Answer: b

12. How can you produce the following results in one line of code?

Welcome

to

C#

Programming!

a) Console.Write( “Welcome \n to \n C# \n Programming!\n” );

b) Console.WriteLine( “Welcome \n to \n C# \n Programming!” );  
c) Console.Write( “Welcome \n to \n C# Programming!” );  
d) a and b

Answer: d

13. Which of the following have the capacity to display formatted data?  
a) Console.Write  
b) Console.WriteLine  
c) Console.WriteFormat  
d) a and b

Answer: d

14. Every variable has a  .

a) type

b) size

c) value

d) All of the above.

Answer: d

15. Which of the following is in the correct order of operator precedence?

a) multiplication, division, parenthesis

b) addition, subtraction, division

c) parenthesis, multiplication, addition

d) None of the above.

Answer: c

16. Which of the following represents "is equal to?"

a) =

b) !=

c) =!

d) ==

Answer: d

17. How many classes are there in a program/application?

a) 1

b) 3+

c) 11+

d) The number of classes may vary; however, in most cases, there is more than one.

Answer: d

18. Which of the following simple type should be used for monetary values?

a) double

b) float

c) int

d) decimal

Answer: b

19. An object’s property can have which of the following accessors?

a) get

b) set

c) a and b

d) None

e) All of the above

Answer: e

20. Which of the following terms refers to the data represented by an object’s instance variables?

a) Properties

b) Attributes

c) Methods

d) Information

Answer: b

21. \_\_\_\_\_\_\_ headers can include void, which specifies that it does not return anything.

a) Method

b) Class

c) Variable

d) a and b

Answer: a

22. In UML class diagrams, the + sign

a) signifies that the section can be expanded.  
b) is the public visibility symbol.  
c) stands for addition.

d) None of the above

Answer: b

23. Every C# application is composed of at least one:

a) public method

b) data member

c) public class declaration

d) imported class

Answer: c

24. Which of the following method headers does the following statement match?  
 Action( “This is an example”, 15, 25.5)  
a) Action()  
b) Action(int x, double y, string z)

c) Action(string x , double y, int z)

d) Action(string x, int y, double z)

Answer: d

25. Why would the access modifier private be used instead of public?  
a) To make it more complicated for accessing methods and variables

b) To hide sensitive information  
c) To help insure encapsulation  
d) b and c

Answer: d

26. How can a private variable be accessed?  
a) If the private variable is inside the same class as the currently executing code, then you can access it normally using the variable’s name.  
b) Use the property for that variable.

c) Use a method that is in the same class as the private variable, which can access the variable.

d) All of the above

Answer: d

27. Attributes of a class are also known as:

a) constructors

b) local variables

c) fields

d) classes

Answer: c

28. Which of the following is a reason for using the get and set accessors?  
a) To follow a universal standard.   
b) To allow the class to control the manner in which the data is set or returned.

c) To make a program more robust.  
d) b and c  
e) All of the above

Answer: d

29. Which method converts a string into an int?  
a) string\_variable.ConvertToInt  
b) Convert.ToInt32  
c) Type.ConvertToInt  
d) All of the above

Answer: b

30. A variable of a reference type contains:

a) information about the type and its data

b) data of that type

c) the address of the location in memory where data is stored

d) None of the above.

Answer: c

31. Which of the following is a C# built-in reference type?

a) int

b) string

c) bool

d) char

Answer: b

32. What is the default value of a reference?

a) 0

b) “”

c) null

d) default

Answer: c

33. A \_\_\_\_\_\_\_\_ is called to create a new instance of a class.

a) constructor  
b) destructor  
c) creator

d) new

Answer: a

34. A default constructor has how many parameters?

a) 0

b) 1

c) 2

d) Variable

Answer: a

35. Which of the following are examples of control statements?  
a) if  
b) if...else  
c) while

d) b and c  
e) a, b and c

Answer: e

36. What is an algorithm?

a) a series of actions that solve a particular problem

b) an English description of a problem to be solved

c) the process of converting between data types

d) None of the above.

Answer: a

37. Which of the following is a type of control structure?

a) declaration structure

b) repetition structure

c) flow structure

d) All of the above.

Answer: b

38. The three types of selection structures are:

a) foreach, for and switch

b) if, for and switch

c) if, if/else and while

d) if, if/else and switch

Answer: d

39. Which of the following is a double-selection control statement?

a) do…while

b) for

c) if…else

d) if

Answer: c

40. if is a \_\_\_\_\_\_\_\_\_ statement.

a) restricted

b) conditional

c) repetitional

d) unrestricted

Answer: b

41. What is output by the following C# code segment?

int temp;

temp = 200;

if ( temp > 90 )

Console.WriteLine( "This porridge is too hot." );

if ( temp < 70 )

Console.WriteLine( "This porridge is too cold." );

if ( temp == 80 )

Console.WriteLine( "This porridge is just right!");

a) This porridge is too hot.

b) This porridge is too cold.

c) This porridge is just right!

d) None of the above.

Answer: a

42. Which of the following statements would cause a while statement to stop executing?

a) 3 <= 11

b) !(7 != 14)

c) 6 != 9

d) All of the above.

Answer: b

43. Which statement is false?

1. To ensure that the operands are of the same type, C# performs implicit conversion on selected operands.
2. Cast operators are unary operators.
3. Cast operators associate from right to left and are one level lower than the multiplicative operators.
4. Cast operators are formed by placing parentheses around the name of a type.

Answer: c

44. When the programmer knows how many times a loop will execute in advance, a          loop should be used.

a) sentinel

b) infinite

c) counter-controlled

d) None of the above.

Answer: c

45. What is the result value of c at the end of the following code segment?

int c = 8;

c++;

++c;

c %= 5;

a) 0

b) 1

c) 3

d) None of the above

Answer: a

46. C, C++, C# are \_\_\_\_\_\_\_ typed languages.  
a) strongly  
b) moderately   
c) weakly  
d) the languages vary

Answer: a  
  
47. Which of the following is not a simple type in C#?  
a) byte  
b) int  
c) bool  
d) bit

Answer: d

47. Which primitive type can hold the largest value?

1. int
2. long
3. float
4. Double

Answer: d

48. What is the size in bits of an int?

1. 8
2. 16
3. 32
4. 64

Answer: c

49. Which of the following is required for counter-controlled repetition?

a) a boolean

b) a method

c) a condition

d) All of the above.

Answer: c

50. Which of the following is syntactically incorrect?

a) for (int i = 1; i < 10; )

b) for ( ; i == 3; )

c) for (i == 3)

d) None of the above.

Answer: b

51. A case can be labeled as to execute in the event that none of the pro­vided cases are equivalent to the controlling expression.

a) general

b) default

c) case \*

d) None of the above.

Answer: b

52. For the code segment below,

switch( q )

{

case 1:

case 2:

Console.WriteLine( "orange" );

break;

case 3:

Console.WriteLine( "banana" );

break;

case 4:

Console.WriteLine( "pear" );

case 5:

Console.WriteLine( "grapes" );

break;

default:

Console.WriteLine( "kiwi" );

} // end switch

between which two lines does an error occur?

1. 3-4
2. 12-13
3. 15-16
4. 16-17

ANSWER: b

53. What is the Windows key sequence for typing the end-of-file indicator in Command Prompt window?

a) <Alt> z

b) <Ctrl> z

c) <Windows>z

d) <Shift>z

Answer: b

54. The statement, when executed in a while loop, skips the remaining statements in the body of the structure and begins the next iteration of the loop.

a) continue

b) break

c) next

d) None of the above.

Answer: a

55. The statement, when executed in a for loop, will terminate the loop.

a) continue

b) break

c) next

d) None of the above.

Answer: b

56. Which of the following operators can be used to ensure at least one out of multiple conditions is true?

a) ||

b) &&

c) ==

d) ^

Answer: a

57. Suppose variable gender is MALE and age equals 60, how is the expression

( gender == FEMALE ) && ( age >= 65 ) evaluated?

1. The condition ( gender == FEMALE ) is evaluated first and the evaluation stops immediately.
2. The condition ( age >= 65 ) is evaluated first and the evaluation stops immediately.
3. Both conditions are evaluated, from left to right.
4. Both conditions are evaluated, from right to left.

Answer: a

58. \_\_\_\_\_\_\_\_\_ methods can be called without the need for an object of the class to exist.  
a) special  
b) independent  
c) static  
d) dependent

Answer: c

59. Methods are called by writing the name of the method followed by      enclosed in parentheses.

a) a condition

b) arguments

c) a counter

d) None of the above.

Answer: b

60. Many prepackaged classes and methods are provided in the .NET FCL, an acronym for the          .

a) Framework Class Library

b) Framework Class Listing

c) Form Class Library

d) None of the above.

Answer: a

61. Which of the following correctly calls the Math class method Sqrt with a value of 36?

a) Sqrt(36);

b) Math.Sqrt(36);

c) Math.Sqrt = 36;

d) None of the above.

Answer: b

62. Which of the following describes a static variable?

a) a variable with one copy shared by all class objects

b) a variable whose value may not be changed

c) all of the above

d) None of the above.

Answer: a

63. How are various parameters separated in the method header?  
a) brackets  
b) braces  
c) commas  
d) periods

Answer: c

64. To call a static method, use the \_\_\_\_\_\_\_\_\_ name followed by a period, and the method with its arguments.

a) class’s  
b) instance variable’s  
c) namespace’s

d) All of the above

Answer: a

65. Which keyword can programmers use to break out of a void method?

a) continue

b) break

c) return

d) next

Answer: c

66. A static method can \_\_\_\_\_\_\_\_.

a) call only other static methods of the same class directly

b) manipulate only static fields in the same class directly

c) be called using the class name and a dot (.)

d) All of the above

Answer: d

67. Stacks are \_\_\_\_\_\_\_\_\_\_\_\_\_ data structures.

a) FIFO

b) Random

c) LIFO

d) None of the above.

Answer: c

68. What does the Framework Class Library hold?  
a) namespaces

b) classes  
c) methods  
d) All of the above.

Answer: d

69. Which directive allows programmers to use the Framework Class Library?  
a) import  
b) using  
c) load

d) namespace

Answer: b

70. Identifiers declared within a class have .

a) block scope

b) class scope

c) local scope

d) None of the above.

Answer: b

71. Which of the following will violate the rules of overloading methods?  
a) Methods with the same signatures but different return types.  
b) Methods with different signatures but the same return type.  
c) Methods with different number of arguments.  
d) Method with different types of arguments.

Answer: a

72. Overloaded methods always have the same \_\_\_\_\_\_\_\_\_.

1. method name
2. return type
3. number of the parameters
4. order of the parameter

Answer: a

73. An overloaded method is one that

1. has a different name as another method, but the same parameters.
2. has the same name as another method, but different parameters.
3. has the same name and parameters as a method defined in another class.
4. has the same name and parameters, but a different return type as another method.

Answer: b

74. Which of the following methods are overloaded?

1. public int max ( int a, int b ) { … }
2. public double max ( double a, double b ) { … }
3. public int max ( int a, int b, int c ) { … }
4. public double max ( double a, double b, double c ) {…}
5. A and B are overloaded; C and D are overloaded
6. A and C are overloaded; B and D are overloaded
7. A, B and C are overloaded
8. All these four methods are overloaded

Answer: d

75. Suppose method1 is declared as void method1 ( int a, float b ). Which of the following methods overloads method1?

1. void method2 ( int a, float b )
2. void method2 ( float a, int b )
3. void method1 ( float a, int b )
4. void method1 ( int b, float a )

Answer: c

76. A recursive method is a method that:

a) calls another method

b) calls itself

c) has no return type

d) None of the above

Answer: b

77. Passing an argument to a method by-value provides the method with:

a) the address of the value in memory

b) a separate copy of the value

c) the type of the value

d) None of the above.

Answer: b

78. The keyword is used to pass value-type variables to methods by-refer­ence.

a) ref

b) reference

c) RefPass

d) None of the above.

Answer: a

79. Arrays may have dimensions.

a) one

b) two

c) more than two

d) All of the above.

Answer: d

80. Arrays are data structures.

a) constant

b) dynamic

c) static

d) None of the above.

Answer: c

81. The number positioned in square brackets after an array name is the           of an item.

a) value

b) position

c) size

d) None of the above.

Answer: b

82. Which of the following correctly accesses the 13th element of array Book?

a) Book[0] + 13

b) Book[13]

c) Book[12]

d) None of the above.

Answer: c

83. Consider the array:

s[ 0 ] = 7  
s[ 1 ] = 0  
s[ 2 ] = -12  
s[ 3 ] = 9  
s[ 4 ] = 10  
s[ 5 ] = 3  
s[ 6 ] = 6

The value of s[ s[ 6 ] - s[ 5 ] ] is:

a) 0

b) 3

c) 9

d) 0

Answer: c

84. Arrays are allocated with the keyword .

a) new

b) array

c) mem

d) None of the above.

Answer: a

85. Which of the following correctly declares and allocates an array of double values?

a) double A[15];

b) double() A = new double[15];

c) double[] A = new double[25];

d) All of the above.

Answer: c

86. An array can be supplied values upon declaration by providing an .

a) initializer list

b) index

c) array allocation

d) None of the above.

Answer: a

87. Constants are declared using keyword .

a) static

b) const

c) dynamic

d) None of the above.

Answer: b

88. Attempting to access an array element out of the bounds of an array, a(n)          occurs.

a. ArrayOutOfBoundsException.

b. ArrayElementOutOfBoundsException.

c. IndexOutOfRangeException.

d. ArrayException.

Answer: c.

89. The international standard for querying relational databases is called:

a) XML

b) SQL

c) HTTP

d) LINQ

Answer: b

90. In a LINQ query, the where clause specifies          .

a) the data source

b) where to put the data

c) the condition(s) for including the item

d) the Location property

d) the data type

Answer: c

91. The range variable is implicitly defined in the \_\_\_\_\_ clause and used to produce results in the \_\_\_\_\_\_ clause

a) where, put

b) from, put

c) from, select

d) where, select

e) in, foreach

Answer: c

92. What method returns the number of items in LINQ query result q?

a) q.Length

b) q.Size

c) q.getUpperBound

d) q.Count

Answer: d

93. Collections of type List< T > can hold objects of what type?

a) only other lists

b) only integers

c) objects of any one type

d) None of the above

Answer: c

94. A List< T > is similar to an array, but can also \_\_\_\_\_\_\_\_\_.

a) dynamically resize

b) add items anywhere in the List< T >

c) contain objects of any one type

d) Both a and b

Answer: d

95.Which of the following statements about LINQ is not true?

A) A new LINQ query must be used when changes are made to the data source.

b) A LINQ query does not need to have a let clause

c) A LINQ query returns an IEnumerable object

d) LINQ stands for Language Integrated Query.

Answer: a

96. A let clause is used to create \_\_\_\_\_\_\_.

a) a method within a LINQ query

b) an subquery

c) a new range variable

d) None of the above

Answer: c

97. Object orientation uses classes to:

a) develop algorithms

b) encapsulate data and methods

c) organize large amounts of data

d) None of the above.

Answer: b

98. An instance of a user-defined type is called a(n) .

a) class

b) interface

c) object

d) None of the above.

Answer: c

99. The \_\_\_\_\_\_\_\_\_ of a class are also called the public services or the public interface of the class.

1. public constructors
2. public instance variables
3. public methods
4. All of the above

Answer: c

100. Instance variables or methods declared with the modifier are accessible only in that class definition.

a) protected

b) static

c) private

d) None of the above.

Answer: c

101. A(n) \_\_\_\_\_\_\_\_ is best used for providing services that bring together disparate objects.

a) abstract class

b) concrete class

c) interface

d) None of the above.

Answer: c

102. The conventional name for an interface to be called Car is:

a) InterfaceCar

b) ICar

c) CarI

d) None of the above.

Answer: b

103. The purpose of an interface is to:

a) provide similar objects with the same functionality, even though each will imple­ment the functionality differently

b) provide different objects with the same functionality, even though each will imple­ment the functionality differently

c) provide default implementations of methods and properties

d) None of the above.

Answer: b

104. Which of the following characteristics can be used to create an interface for a file, a cat and a house?

a) door

b) tail

c) age

d) None of the above.

Answer: c

105. Which of the following does not complete the sentence correctly?

An interface         .

a) forces classes that implement it to declare all the interface methods.

b) is used in place of an abstract class when there is no default implementation to

inherit.

c) cannot be instantiated.

d) can be instantiated.

Answer: d

106. The UML distinguishes an interface from other classes by placing the word “interface” in          above the interface name.

a) italics.

b) carets.

c) guillemets.

d) bold.

Answer: c

107. Interfaces can have          methods.

a) 0

b) 1

c) 2

d) any number of

Answer: d

108. Which is used to specify that a class will be implementing an interface?

a) using

b) :

c) implements

d) extends.

Answer: b

109. A class that implements an interface but does not declare all of the interface’s methods must be declared:

a) public

b) interface

c) abstract

d) final

Answer: c

110. Constants declared in an interface are implicitly \_\_\_\_\_\_\_.

a. private.

b. static.

c. abstract.

d. All of the above.

Answer: b

111. Operator overloading is the process of:

a) enabling C#’s operators to work with class objects

b) using operators to create new classes

c) using operators to specify which versions of overloaded methods to use

d) None of the above.

Answer: a

112. Overloaded operator methods must be declared public and \_\_\_\_\_\_\_\_.

a) sealed

b) protected

c) static

d) None of the above.

Answer: c

113. Keyword \_\_\_\_\_\_\_ is used to indicate a method overloads a specific operator.

a) implement

b) operator

c) overload

d) op

Answer: b

114. Which of the following should usually be private?

a) methods

b) constructors

c) variables

d) All of the above

Answer: c

115. Which of the following statements is true?

a) Methods and instance variables can both be either public or private.

b) Information hiding is achieved by restricting access to class members via keyword public.

c) The public members of a class are not directly accessible to the client of a class.

d) None of the above is true.

Answer: a

116. An object’s this reference refers to:

a) the object itself

b) what the programmer specified

c) the entry point of the program

d) None of the above.

Answer: a

117. In a method in which a parameter has the same name as an instance variable, using the this reference allows you to refer to \_\_\_\_\_\_\_\_.

a) the parameter

b) the instance variable

c) varies depending on the situation

d) None of the above

Answer: b

118. When should a program explicitly use the this reference?

a) accessing a private variable

b) accessing a public variable

c) accessing a local variable

d) accessing a field that is shadowed by a local variable

Answer: d

119. Having a this reference allows:

1. A method to refer explicitly to the instance variables and other methods of the object on which the method was called.
2. A method to refer implicitly to the instance variables and other methods of the object on which the method was called.
3. An object to reference itself.
4. All of the above.

Answer: d

120. A constructor cannot:

a) be overloaded.

b) initialize variables to their defaults

c) specify return types or return values

d) have the same name as the class

Answer: c

121. Constructors:

a) initialize instance variables

b) when overloaded, can have identical argument lists

c) when overloaded, are selected by number and types of parameters

d) a and c

Answer: d

122. A constructor that has no arguments is called a \_\_\_\_\_\_\_\_.

a) zero-argument constructor

b) parameterless constructor

c) default constructor

d) main constructor

Answer: b

123. Which statement is false?

a) The compiler always creates a default constructor for a class.

b) If a class has constructors, but none of the public constructors are parameterless, and a program attempts to call a parameterless constructor to initialize an object of the class, a compilation error occurs.

c) A constructor can be called with no arguments only if the class does not have any constructors or if the class has a public parameterless constructor.

d) Parameterless constructors do not have any arguments.

Answer: a

124. How many parameters does the default constructor that C# creates for you have?

a) 3  
b) 1  
c) 0

d) varies

Answer: c

125. The use of references to objects of preexisting classes as members of new objects is called .

a) inheritance

b) composition

c) polymorphism

d) None of the above.

Answer: b

126. Composition:

1. Is a form of software reuse.
2. Is using an object reference as a class member.
3. Is a good design practice.
4. All of the above.

Answer: d

127. Composition is sometimes referred to as a(n) \_\_\_\_\_\_\_\_.

1. is-a relationship
2. has-a relationship
3. have-a relationship
4. one-to-many relationship

Answer: b

128. Which of the following describes a static variable?

a) a variable with one copy shared by all class objects

b) a variable whose value may not be changed

c) all of the above

d) None of the above.

Answer: a

129. Which of the following is not true?

a) A static method or property must be used to access private static instance variables.

b) A static method has no this reference.

c) A static method can be accessed even when no objects of its class have been instantiated.

d) A static method can call instance methods directly.

Answer: d

130. The affect of software reuse on the development of powerful, high-quality software is sometimes known as (RAD).

a) rapid application development

b) reusable applications development

c) rapid application design

d) reusable application design

Answer: a

131. C# programmers do not focus on:

1. crafting new classes and reusing existing classes
2. understanding class library implementations
3. carefully testing classes they design
4. carefully documenting classes they design

Answer: b

132. Which of the following does not contribute to improved software reusability?

1. Quickly creating new class libraries without testing them thoroughly.
2. Licensing schemes and protection mechanisms.
3. Descriptions of classes that allow programmers to determine whether a class fits their needs.
4. Cataloging schemes and browsing mechanisms.

Answer: a

133. Abstract Data Types:

1. elevate the importance of data
2. are only approximations or models of real-world concepts and behaviors
3. capture two notions, data representation and operations
4. All of the above

Answer: d.

134. The term information hiding refers to:

1. public methods
2. hiding implementation details from clients of a class
3. accessing static class members
4. the process of releasing an object for garbage collection

Answer: b

135. Stacks are commonly referred to as data structures.

a) first-in, last-out

b) first-in, first-out

c) last-in, first-out

d) None of the above.

Answer: c

136. A data structure can be described as a "waiting line."

a) stack

b) queue

c) list

d) None of the above.

Answer: b

137. A common result of reusing software is .

a) virus infection

b) naming collisions

c) insecure programs

d) None of the above

Answer: b

138. A class is made into a for use in other programs.

a) dynamic link library

b) data location library

c) data loading library

d) None of the above.

Answer: a

139. In C#, classes can only be declared with \_\_\_\_\_\_\_\_\_\_\_ modifer(s).  
a) public

b) private

c) internal

d) a and c

Answer: c  
  
140. If no modifier is include in the class declaration, the class defaults to \_\_\_\_\_\_\_ access.  
a) public  
b) private

c) protected  
d) readonly

Answer: d

141. Anonymous types are most similar in function to

a) lambda expressions

b) object initializers

c) delegates

d) extension methods

Answer: b

142. A class inherited from two or more levels up in the hierarchy is known as a .

a) indirect base class

b) direct base class

c) superclass

d) None of the above

Answer: a

143. Inheritance is represented by a(n) \_\_\_\_\_\_\_\_ relationship.

a) "uses"

b) "is-a"

c) "has-a"

d) None of the above.

Answer: b

144. A derived class cannot access the members of its base class.

a) private

b) static

c) protected

d) None of the above.

Answer: a

145. Which of the following statements is not true?

1. A derived class is generally larger than its base class.
2. A base class object is a derived class object.
3. The class following the “:”in a class declaration is the direct base class of the class being declared.
4. C# does not support multiple inheritance.

Answer: b

146. Which of the following pairs demonstrates the "is-a" relationship?

a) car, engine

b) book, table of contents

c) baseball, sport

d) None of the above

Answer: c

147. Which of the following pairs demonstrates the "has-a" relationship?

a) car, vehicle

b) house, window

c) teacher, person

d) None of the above

Answer: b

148. Identify which of the following examples could be considered a base class for the Computer class?

a) machine

b) hard-drive

c) software

d) keyboard

Answer: a

149. Which of the following is not a base/derived class relationship?

1. Ford/Taurus
2. University/Boston University
3. Sailboat/Tugboat
4. Country/USA

Answer: c

150. An advantage of inheritance is that:

1. all methods can be inherited
2. all instance variables can be uniformly accessed by base classes and derived classes
3. Objects of a derived class can be treated like objects of their base class
4. None of the above.

Answer: c

151. When a derived-class member overrides a base-class member, the base-class member can be accessed from the derived-class by using the keyword .

a) base

b) top

c) super

d) None of the above

Answer: a

152. Base class methods with this level of access cannot be called from derived classes.

1. private
2. public
3. protected
4. package

Answer: a

153. A method must be declared ­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_ for it to be overridden by derived classes.

a) overrides

b) overridable

c) virtual

d) None of the above

Answer: c

154. Which of the following is a potential problem associated with using pro­tected instance variables with inheritance?

a) naming collisions occur more frequently

b) a derived-class method may assign illegal values

c) multiple copies of data may become inconsistent

d) None of the above

Answer: b

155. Which of the following classes is the root of the class hierarchy?

a) System.object

b) Point

c) ToString

d) None of the above

Answer: a

156. Every class in C#, except \_\_\_\_\_\_\_\_\_\_, extends an existing class.

1. Integer
2. object
3. String
4. Class

Answer: b

157. Overriding a method differs from overloading a method because:

1. For an overloaded constructor, the base class constructor will always be called first.
2. For an overridden constructor, the base class constructor will always be called first.
3. Overloaded methods have the same signature.
4. Overridden methods have the same signature.

Answer: d

158. To avoid duplicating code (and possibly errors), use \_\_\_\_\_\_\_\_, rather than \_\_\_\_\_\_\_\_.

1. inheritance, the “copy-and-paste” approach.
2. the “copy-and-past” approach, inheritance.
3. a class that explicitly extends object, a class that does not extend object.

d. a class that does not extend object, a class that explicitly extends object.

Answer: a

159. Consider the classes below, declared in the same file:

class A

{

int a;

public A()

{

a = 7;

}

}

class B : A

{

int b;

public B()

{

b = 8;

}

}

Which of the statements below is not true?

1. Both variables a and b are instance variables.
2. After the constructor for class B is executed, the variable a will have the value 7.
3. After the constructor for class B is executed, the variable b will have the value 8.
4. A reference to class A can be treated as a reference to class B.

Answer: d

160. Which base class members are inherited by all derived classes of that base class?

1. private instance variables and methods
2. protected instance variables and methods
3. private constructors
4. protected constructors

Answer: b

161. Which statement is true when a base class uses protected instance variables?

1. A derived class object can assign an invalid value to the base class’s instance variables, thus leaving the object in an inconsistent state.
2. Derived class methods are more likely to be written so that they depend on the base class’s data implementation.
3. We may need to modify all the derived classes of the base class if the base class implementation changes.
4. All of the above.

Answer: d

162. private fields of a base class can be accessed in a derived class

1. by calling private methods declared in the base class
2. by calling public or protected methods declared in the base class
3. directly
4. All of the above

Answer: b

163. When a derived class constructor calls its base class constructor, what happens if the base class’s constructor does not assign a value to an instance variable?

1. a syntax error occurs
2. a compile-time error occurs
3. a run-time error occurs
4. the program compiles and runs correctly because the instance variables are initialized to their default values

Answer: d

164. How can a derived class call a base class constructor?  
a) implicitly

b) explicitly

c) a and b

d) the derived class cannot call the base class constructor

Answer: c

165. The default implementation of method ToString of object returns a string representing \_\_\_\_\_\_\_\_.

1. the object’s type
2. the object class name
3. namespace\_name.object\_class\_name
4. None of the above

Answer: c

166. The default Equals implementation determines:

1. whether two references refer to the same object in memory.
2. whether two references have the same type.
3. whether two objects have the same instance variables.
4. whether two objects have the same instance variable values.

Answer: a

167. Polymorphism enables the programmer to:

a) program in the general.

b) program in the specific.

c) absorb attributes and behavior from previous classes.

d) hide information from the user.

Answer: a

168.Which of the following is not true about interfaces?

a) An interface describes a set of methods that can be called on an object, providing a

default implementation for the methods.

b) An interface describes a set of methods that can be called on an object, without providing concrete implementation for the methods.

c) Interfaces are useful when attempting to assign common functionality to possibly

unrelated classes.

d) Once a class implements an interface, all objects of that class have an is-a relationship with the interface type.

Answer: a

169. Polymorphism specifically enables the creation of programs that handle:

a) classes that are containers for other classes

b) large amounts of data with efficiency

c) a wide variety of classes in a generic manner

d) None of the above

Answer: c

170. For which of the following would polymorphism not provide a clean solution?

a) A billing program where there is a variety of clients who are billed with different fee structures.

b) A maintenance log program where a variety of machine data is collected and maintenance schedules are produced for each machine based on the data collected.

c) A program to compute a 5% savings account interest for a variety of clients.

d) An IRS program that maintains information on a variety of taxpayers and determines who to audit based on criteria for classes of taxpayers.

Answer: c

171. Polymorphism allows for specifics to be dealt with during:

a. execution

b. compilation

c. programming

d. debugging

Answer: a

172. Polymorphism involves:

a) the same message sent to a variety of objects

b) a specific message sent to each specific object

c) different messages sent to one object

d) None of the above.

Answer: a

173. Which statement best describes the relationship between base class and derived class types?

a. A derived class reference cannot be assigned to a base class variable and a base class

reference cannot be assigned to a derived class variable.

b. A derived class reference can be assigned to a base class variable and a base class

reference can be assigned to a derived class variable.

c. A base class reference can be assigned to a derived class variable, but a derived class

reference cannot be assigned to a base class variable.

d. A derived class reference can be assigned to a base class variable, but a base class

reference cannot be assigned to a derived class variable.

Answer: d

174. If an application needs to perform a derived-class-specific operation on a derived class object reference by a base class variable, the application must first cast the base class reference to a derived class reference through a technique known as \_\_\_\_\_\_\_\_\_.

a) downcasting  
b) upcasting  
c) decreasecasting

d) increasecasting

Answer: a

175. Abstract classes are classes which may not be:

a) inherited

b) accessed by derived-classes

c) instantiated

d) None of the above.

Answer: c

176. Classes which may be instantiated are \_\_\_\_\_\_\_\_\_\_\_ classes.

a) instance

b) concrete

c) abstract

d) None of the above

Answer: b

177. A class’s initializes members of that class.

a) constructor

b) utility method

c) access modifier

d) None of the above.

Answer: a