03 Object-Oriented Programming

Candidate name: Omprakash Narayanan Lakshmanan

1. The six combinations of access modifier keywords are
   * public – public members can be accessed from anywhere
   * private – private members can only be accessed within the same class or struct.
   * protected – protected members can be accessed from the same class and its derived classes.
   * internal – internal members can be accessed only within the same assembly
   * protected internal – protected internal members can be accessed from the same assembly and the derived classes from any other assembly.
   * private protected – private protected members can be accessed within the same class and its derived classes within the same assembly.
2. static – static members should be referenced through the type name and it can’t be referenced through an instance

const – const fields must be assigned a value at the time of declaration and after that, they cannot be modified.

readonly – readonly fields can be initialized either at the time of declaration or within the constructor of the same class. It can be used for run-time constants.

1. Constructors are special methods that are automatically called when an object of a class is created to initialize all the class data members. If there are no explicitly defined constructors in the class, the compiler creates a default constructor automatically.
2. partial keyword can be used to split the definition of a class, a struct and an interface. It indicates that other parts of the class, struct or interface can be defined in the namespace. All the parts must use the partial keyword.
3. Tuple is a data structure that contains a sequence of elements of different data types.
4. record can be used when we want value-based equality and comparison, but don’t want to copy values and want to use reference variables.
5. Overloading is the ability to have multiple methods within the same class with the same name, but with different parameters. Overloading is known as compile-time polymorphism.

Overriding is the ability to redefine the implementation of a method in a class that inherits from a parent class. Overriding is called run-time polymorphism.

1. field is a variable that is defined inside a class. Properties are also called accessor methods. It is a member of the class that provides an abstraction to set and get the value of a private field.

Example:

public class Person {

private int age; //age is a field

public int Age { // Age is a property

get {return age;}

set {age = value;}

}

}

1. A method parameter can be made optional by setting a default value as part of its definition. Optional parameters are defined at the end of the parameter list, after any required parameters.
2. Interface is a contract, and it does not have any implementation. An abstract class is a special type of class that cannot be instantiated. Abstract classes are either partially implemented or not implemented at all.
3. Members of an interface have accessibility level ‘public’.
4. True
5. True
6. False
7. False
8. True
9. True
10. True
11. False
12. False
13. True
14. False
15. True