

CIS 343 – Structure of Programming Languages
Homework Assignment #4, Winter 2019
Topic: Ruby Language

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1. Ruby is a(n) _____ language.
a) interpreted b) compiled
2. Everything that a Ruby can bind to a variable name is an object. True or False
3. A comment hides lines from the Ruby interpreter so that the lines are discarded or ignored. A block comment that conceals several lines from the interpreter is specified using _____.
a) # b) =begin/=end c) // d) *
4. An unless statement is the negated form of what other control structure?
a) while b) if c) for d) until
5. Comments in Ruby begin with a _____ character and continue to the end of the line.
a) * b) # c) \$ d) /
6. _____ string literals support string interpolation.
a) Single-quoted b) Double-quoted
7. A symbol literal is written by prefixing an identifier or string with _____ symbol.
a) * b) # c) : d) \$
8. A Range object represents the values between a start value and an end value. If a range literal is written by placing three dots between the start and end value, then the range is _____.
a) inclusive b) exclusive
9. In Ruby, negative index values count from the end of the array. True or False
10. If you attempt to read an element beyond the end of an array, Ruby throws an exception. True or False
11. Hashes are also known as maps or associative arrays. True or False
12. Methods are defined with the _____ keyword.
a) new b) initialize c) def d) self
13. In Ruby, if a method name ends in an exclamation point (!), as in delete! method of the String class, it indicates that the method is destructive. True or False

14. Ruby lets you pass a variable number of arguments to a method just by prefixing a method parameter with the _____ symbol.
- a) & b) * c) \$ d) #
15. Where Java uses a `finally` clause in exception handling, Ruby uses _____ clause.
- a) `rescue` b) `ensure` c) `try` d) `catch`
16. In Ruby, a class name must begin with an uppercase letter. *True* or *False*
17. In Ruby, even a class is an object. *True* or *False*
18. The _____ method is the first code that is executed after an object is instantiated/created.
- a) `new` b) `initialize` c) `clone` d) `dup`
19. The method _____ automatically creates one or more instance variables with corresponding methods that return (get) the values of each method.
- a) `attr_reader` b) `attr_writer`
20. Class methods are also known as static methods. *True* or *False*
21. If you copy a frozen object with _____ method, the copy will not be frozen.
- a) `clone` b) `dup`
22. To define a class/static method, you prefix the name of the method with the name of the class or module in the method definition. *True* or *False*
23. The _____ method is called to create an instance of a class in Ruby.
- a) `new` b) `initialize` c) `clone` d) `dup`
24. The return value of a method is the value of the last expression evaluated in its body. *True* or *False*
25. When a method is defined outside of a class or a module, it is effectively a global function rather than a method to be invoked on an object. *True* or *False*
26. Global variables are available globally to a program. Their scope is the whole program. Global variables are prefixed with _____ sign.
- a) @ b) \$ c) @@ d) #
27. In Ruby, classes and modules are open and can be modified and extended at runtime. *True* or *False*
28. In Ruby, strings are mutable. *True* or *False*
29. In Ruby, classes define an ordering by implementing the _____ operator.
- a) * b) * c) `<=>` d) `between?`
30. In Ruby, are numbers primitives or objects? objects
31. Comparable module (or mixin) does not define _____ operator.
- a) < b) != c) > d) `between?`

32. A frozen object becomes immutable. *True* or *False*
33. Global functions are defined as _____ methods of the `Object` class.
a) `public` b) `private` c) `protected` d) *static*
34. It is possible to define a method on a single specified object. The resulting method is known as a singleton method because it is available only on a single object. *True* or *False*
35. A _____ is a chunk of Ruby code associated with a method invocation.
a) `class` b) `module` c) *block*
36. A block in Ruby is wrapped by "do/end" or _____.
a) `()` b) *{ }* c) `[]`
37. Any method invocation that has a block associated with it may invoke the code in that block with the _____ statement.
a) *yield* b) `try` c) `invoke` d) `execute`
38. The state/data of objects in Ruby can be accessed only through the methods they define. *True* or *False*
39. Ruby uses the _____ symbol to indicate that one class is an extension of another class.
a) `$` b) `>` c) *<* d) `#`
40. In Ruby, the `initialize` method is automatically made "private". *True* or *False*
41. In Ruby, the `Class` class is a subclass of "`Module`". *True* or *False*
42. A _____ cannot be instantiated and cannot be subclassed.
a) `Class` b) *Module*
43. Classes cannot be used as mixins (i.e. included into another class). *True* or *False*
44. One module can include another module. *True* or *False*
45. To include the `Comparable` module/mixin, a class must define the _____ operator.
a) `<` b) `>` c) *<=>* d) `!=`
46. To include the `Enumerable` module/mixin, a collection class must define the *#each* method which yields successive members of the collection.
47. "Modules" are used as namespaces and as mixins. *True* or *False*
48. Procs and lambdas are objects that represent a block. *True* or *False*
49. The term "*closure*" refers to an object that is an invocable function (block of code) that retains the bindings of *free* variables used in the function. *True* or *False*
50. The `load` and `require` methods execute the code in the specified file immediately – `load` loads the same file multiple times whereas `require` tries to prevent multiple loads of the same file. *True* or *False*