"""

## Knowledge Classes Objects###<----------->####

Multiple Choice:

1. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ programming practice is centered on creating functions that are

separate from the data that they work on.

a. modular

> b. procedural

c. functional

d. object-oriented

2. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ programming practice is centered on creating objects.

a. object-centric

b. objective

c. procedural

>d. object-oriented

3. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a component of a class that references data.

a. method

b. instance

>c. data attribute<

d. module

4. An object is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

a. blueprint

b. cookie cutter

c. variable

>d. instance<

5. By doing this you can hide a class’s attribute from code outside the class.

a. avoid using the self parameter to create the attribute

> b. begin the attribute’s name with two underscores

c. begin the name of the attribute with private\_\_

d. begin the name of the attribute with the @ symbol

6. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ method gets the value of a data attribute but does not change

it.

a. retriever

b. constructor

c. mutator

>d. accessor

7. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_ method stores a value in a data attribute or changes its value in some other way.

a. modifier

b. constructor

>c. mutator

d. accessor

8. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ method is automatically called when an object is created.

>a. \_\_init\_\_

b. init

c. \_\_str\_\_

d. \_\_object\_\_

9. If a class has a method named \_\_str\_\_, which of these is a way to call the method?

>a. you call it like any other method: object.\_\_str\_\_()

>b. by passing an instance of the class to the built in str function

c. the method is automatically called when the object is created

d. by passing an instance of the class to the built-in state function

10. A set of standard diagrams for graphically depicting object-oriented systems is provided by \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

>a. the Unified Modeling Language

b. flowcharts

c. pseudocode

d. the Object Hierarchy System

11. In one approach to identifying the classes in a problem, the programmer identifies the

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a description of the problem domain.

a. verbs

b. adjectives

c. adverbs

>d. nouns

12. In one approach to identifying a class’s data attributes and methods, the programmer

identifies the class’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

> a. responsibilities

b. name

c. synonyms

d. nouns

True or False:

1. The practice of procedural programming is centered on the creation of objects. F

2. Object reusability has been a factor in the increased use of object-oriented programming. T

3. It is a common practice in object-oriented programming to make all of a class’s data attributes accessible to statements outside the class. F

4. A class method does not have to have a self parameter.

F

5. Starting an attribute name with two underscores will hide the attribute from code outside the class. T

6. You cannot directly call the \_\_str\_\_ method. F

7. One way to find the classes needed for an object-oriented program is to identify all of

the verbs in a description of the problem domain F

##Knowledge Decision Structure##<------------->####

Multiple Choice

1. A \_\_\_\_\_\_\_\_\_\_ structure can execute a set of statements only under certain circumstances.

a. sequence

b. circumstantial

> c. decision

d. Boolean

2. A \_\_\_\_\_\_\_\_\_\_ structure provides one alternative path of execution.

a. sequence

> b. single alternative decision

c. one path alternative

d. single execution decision

3. A(n) \_\_\_\_\_\_\_\_\_\_ expression has a value of either true or false.

a. binary

b. decision

c. unconditional

> d. Boolean

4. The symbols >, <, and == are all \_\_\_\_\_\_\_\_\_\_ operators.

>a. relational

b. logical

c. conditional

d. ternary

5. A(n) \_\_\_\_\_\_\_\_\_ structure tests a condition and then takes one path if the condition is

true, or another path if the condition is false.

a. if statement

b. single alternative decision

> c. dual alternative decision

d. sequence

6. You use a(n) \_\_\_\_\_\_\_\_\_\_ statement to write a single alternative decision structure.

a. test-jump

> b. if

c. if-else

d. if-call

7. You use a(n) \_\_\_\_\_\_\_\_\_\_ statement to write a dual alternative decision structure.

a. test-jump

b. if

> c. if-else

d. if-call

8. and, or, and not are \_\_\_\_\_\_\_\_\_\_ operators.

a. relational

> b. logical

c. conditional

d. ternary

9. A compound Boolean expression created with the \_\_\_\_\_\_\_\_\_\_ operator is true only if

both of its subexpressions are true.

> a. and

b. or

c. not

d. both

10. A compound Boolean expression created with the \_\_\_\_\_\_\_\_\_ operator is true if either

of its subexpressions is true.

a. and

> b. or

c. not

d. either

11. The \_\_\_\_\_\_\_\_\_\_\_ operator takes a Boolean expression as its operand and reverses its

logical value.

a. and

b. or

> c. not

d. either

12. A \_\_\_\_\_\_\_\_\_\_\_ is a Boolean variable that signals when some condition exists in the

program.

> a. flag

b. signal

c. sentinel

d. siren

True or False

1. You can write any program using only sequence structures. F

2. A program can be made of only one type of control structure. You cannot combine structures.

F

3. A single alternative decision structure tests a condition and then takes one path if the condition is true, or another path if the condition is false. F

4. A decision structure can be nested inside another decision structure. T

5. A compound Boolean expression created with the and operator is true only when both subexpressions are true.

T

##Knowledge Dicts Sets##<------------------->##

Multiple Choice:

1. You can use the \_\_\_\_\_\_\_\_\_ operator to determine whether a key exists in a dictionary.

a. &

> b. in

c. ^

d. ?

2. You use \_\_\_\_\_\_\_\_\_ to delete an element from a dictionary.

a. The remove method

b. The erase method

c. The delete method

> d. The del statement

3. The \_\_\_\_\_\_\_\_\_ function returns the number of elements in a dictionary:

a. size()

> b. len()

c. elements()

d. count()

4. You can use \_\_\_\_\_\_\_\_\_ to create an empty dictionary.

> a. {}

b. ()

c. []

d. empty()

5. The \_\_\_\_\_\_\_\_\_ method returns a randomly selected key-value pair from a dictionary.

a. pop()

b. random()

> c. popitem()

d. rand\_pop()

6. The \_\_\_\_\_\_\_\_\_ method returns the value associated with a specified key, and removes

that key-value pair from the dictionary.

> a. pop()

b. random()

c. popitem()

d. rand\_pop()

7. The \_\_\_\_\_\_\_\_\_ dictionary method returns the value associated with a specified key. If

the key is not found, it returns a default value.

a. pop()

b. key()

c. value()

>d. get()

8. The \_\_\_\_\_\_\_\_\_ method returns all of a dictionary’s keys and their associated values as a sequence of tuples.

a. keys\_values()

b. values()

>c. items()

d. get()

9. The following function returns the number of elements in a set:

a. size()

> b. len()

c. elements()

d. count()

10. You can add one element to a set with this method.

a. append

> b. add

c. update

d. merge

11. You can add a group of elements to a set with this method.

a. append

b. add

> c. update

d. merge

12. This set method removes an element but does not raise an exception if the element is

not found.

a. remove

> b. discard

c. delete

d. erase

13. This set method removes an element and raises an exception if the element is not found.

> a. remove

b. discard

c. delete

d. erase

14. This operator can be used to find the union of two sets.

> a. |

b. &

c. -

d. ^

15. This operator can be used to find the difference of two sets.

a. |

b. &

> c. -

d. ^

16. This operator can be used to find the intersection of two sets.

a. |

> b. &

c. -

d. ^

17. This operator can be used to find the symmetric difference of two sets.

a. |

b. &

c. -

> d. ^

True or False:

1. The keys in a dictionary must be mutable objects. F

2. Dictionaries are not sequences. T

3. A tuple can be a dictionary key. T

4. A list can be a dictionary key. F

5. The dictionary method popitem does not raise an exception if it is called on an empty dictionary.

F

6. The following statement creates an empty dictionary:

mydct = {} T

7. The following statement creates an empty set:

myset = () F

8. Sets store their elements in an unordered fashion. T

9. You can store duplicate elements in a set. F

10. The remove method raises an exception if the specified element is not found in the

set. T

##Knowledge Files and Exceptions<-------------------->##

Multiple Choice:

1. A file that data is written to is known as a(n)

a. input file

> b. output file

c. sequential access file

d. binary file

2. A file that data is read from is known as a(n)

> a. input file

b. output file

c. sequential access file

d. binary file

3. Before a file can be used by a program, it must be

a. formatted

b. encrypted

c. closed

> d. opened

4. When a program is finished using a file, it should do this.

a. erase the file

b. open the file

> c. close the file

d. encrypt the file

5. The contents of this type of file can be viewed in an editor such as Notepad.

> a. text file

b. binary file

c. English file

d. human-readable file

6. This type of file contains data that has not been converted to text.

a. text file

> b. binary file

c. Unicode file

d. symbolic file

7. When working with this type of file, you access its data from the beginning of the file

to the end of the file.

a. ordered access

b. binary access

c. direct access

>d. sequential access

8. When working with this type of file, you can jump directly to any piece of data in the

file without reading the data that comes before it.

a. ordered access

b. binary access

>c. direct access

d. sequential access

9. This is a small “holding section” in memory that many systems write data to before

writing the data to a file.

>a. buffer

b. variable

c. virtual file

d. temporary file

10. This marks the location of the next item that will be read from a file.

a. input position

b. delimiter

c. pointer

>d. read position

11. When a file is opened in this mode, data will be written at the end of the file’s existing

contents.

a. output mode

>b. append mode

c. backup mode

d. read-only mode

12. This is a single piece of data within a record.

>a. field

b. variable

c. delimiter

d. subrecord

13. When an exception is generated, it is said to have been \_\_\_\_\_\_\_\_\_\_.

a. built

>b. raised

c. caught

d. killedReview Questions 291

14. This is a section of code that gracefully responds to exceptions.

a. exception generator

b. exception manipulator

>c. exception handler

d. exception monitor

15. You write this statement to respond to exceptions.

a. run/handle

>b. try/except

c. try/handle

d. attempt/except

True or False:

1. When working with a sequential access file, you can jump directly to any piece of data F

in the file without reading the data that comes before it.

2. When you open a file that file already exists on the disk using the 'w' mode, the contents T

of the existing file will be erased.

3. The process of opening a file is only necessary with input files. Output files are F

automatically opened when data is written to them.

4. When an input file is opened, its read position is initially set to the first item in the file. T

5. When a file that already exists is opened in append mode, the file’s existing contents F

are erased.

6. If you do not handle an exception, it is ignored by the Python interpreter and the program F

continues to execute.

7. You can have more than one except clause in a try/except statement. T

8. The else suite in a try/except statement executes only if a statement in the try suite

raises an exception. F

9. The finally suite in a try/except statement executes only if no exceptions are raised F

by statements in the try suite.

## Knowledge Functions<----------------------------->##

Multiple Choice

1. A group of statements that exist within a program for the purpose of performing a specific task is a(n) \_\_\_\_\_\_\_\_\_\_.

a. block

b. parameter

>c. function

d. expression

2. A design technique that helps to reduce the duplication of code within a program and

is a benefit of using functions is \_\_\_\_\_\_\_\_\_\_.

>a. code reuse

b. divide and conquer

c. debugging

d. facilitation of teamwork

3. The first line of a function definition is known as the \_\_\_\_\_\_\_\_\_\_.

a. body

b. introduction

c. initialization

>d. header

4. You \_\_\_\_\_\_\_\_\_\_ the function to execute it.

a. define

>b. call

c. import

d. export

5. A design technique that programmers use to break down an algorithm into functions

is known as \_\_\_\_\_\_\_\_\_\_.

>a. top-down design

b. code simplification

c. code refactoring

d. hierarchical subtasking

6. A \_\_\_\_\_\_\_\_\_\_ is a diagram that gives a visual representation of the relationships

between functions in a program.

a. flowchart

b. function relationship chart

c. symbol chart

>d. hierarchy chart

7. A \_\_\_\_\_\_\_\_\_\_ is a variable that is created inside a function.

a. global variable

>b. local variable

c. hidden variable

d. none of the above; you cannot create a variable inside a function

8. A(n) \_\_\_\_\_\_\_\_\_\_ is the part of a program in which a variable may be accessed.

a. declaration space

b. area of visibility

>c. scope

d. mode

9. A(n) \_\_\_\_\_\_\_\_\_\_ is a piece of data that is sent into a function.

>a. argument

b. parameter

c. header

d. packet

10. A(n) \_\_\_\_\_\_\_\_\_\_ is a special variable that receives a piece of data when a function is called.

a. argument

>b. parameter

c. header

d. packet

11. A variable that is visible to every function in a program file is a \_\_\_\_\_\_\_\_\_\_.

a. local variable

b. universal variable

c. program-wide variable

>d. global variable

12. When possible, you should avoid using \_\_\_\_\_\_\_\_\_\_ variables in a program.

a. local

>b. global

c. reference

d. parameter

True or False

1. The phrase “divide and conquer” means that all of the programmers on a team should F

be divided and work in isolation.

2. Functions make it easier for programmers to work in teams. T

3. Function names should be as short as possible. F

4. Calling a function and defining a function mean the same thing. F

5. A flowchart shows the hierarchical relationships between functions in a program. F

6. A hierarchy chart does not show the steps that are taken inside a function. T

7. A statement in one function can access a local variable in another function. F

8. In Python you cannot write functions that accept multiple arguments. F

9. In Python, you can specify which parameter an argument should be passed into a function call. T

10. You cannot have both keyword arguments and non-keyword arguments in a function call. F

## Knowledge Input Output <----------------------------------->##

Multiple Choice

1. A \_\_\_\_\_\_\_\_\_\_ error does not prevent the program from running, but causes it to produce incorrect results.

a. syntax

b. hardware

> c. logic

d. fatal

2. A \_\_\_\_\_\_\_\_\_\_ is a single function that the program must perform in order to satisfy the customer.

a. task

> b. software requirement

c. prerequisite

d. predicate

3. A(n) \_\_\_\_\_\_\_\_\_\_ is a set of well-defined logical steps that must be taken to perform a task.

a. logarithm

b. plan of action

c. logic schedule

> d. algorithm

4. An informal language that has no syntax rules, and is not meant to be compiled or

executed is called \_\_\_\_\_\_\_\_\_\_.

a. faux code

> b. pseudocode

c. Python

d. a flowchart

5. A \_\_\_\_\_\_\_\_\_\_ is a diagram that graphically depicts the steps that take place in a program.

> a. flowchart

b. step chart

c. code graph

d. program graph

6. A \_\_\_\_\_\_\_\_\_\_ is a sequence of characters.

a. char sequence

b. character collection

> c. string

d. text block

7. A \_\_\_\_\_\_\_\_\_\_ is a name that references a value in the computer’s memory.

> a. variable

b. register

c. RAM slot

d. byte

8. A \_\_\_\_\_\_\_\_\_\_ is any hypothetical person using a program and providing input for it.

a. designer

> b. user

c. guinea pig

d. test subject

9. A string literal in Python must be enclosed in

a. parentheses

b. single-quotes

c. double-quotes

> d. either single-quotes or double-quotes

10. Short notes placed in different parts of a program explaining how those parts of the program work are called \_\_\_\_\_\_\_\_\_\_.

> a. comments

b. reference manuals

c. tutorials

d. external documentation

11. A(n) \_\_\_\_\_\_\_\_\_\_ makes a variable reference a value in the computer’s memory.

a. variable declaration

> b. assignment statement

c. math expression

d. string literal

12. This symbol marks the beginning of a comment in Python.

a. &

b. \*

c. \*\*

> d. #

13. Which of the following statements will cause an error?

a. x = 17

> b. 17 = x

c. x = 99999

d. x = '17'

14. In the expression 12 + 7, the values on the right and left of the + symbol are called \_\_\_\_\_\_\_\_\_\_.

> a. operands

b. operators

c. arguments

d. math expressions

15. This operator performs integer division.

> a. //

b. %

c. \*\*

d. /

16. This is an operator that raises a number to a power.

a. %

b. \*

> c. \*\*

d. /

17. This operator performs division, but instead of returning the quotient it returns the remainder.

> a. %

b. \*

c. \*\*

d. /

18. Suppose the following statement is in a program: price = 99.0. After this statement executes, the price variable will reference a value of this data type.

a. int

> b. float

c. currency

d. str

19. This built-in function can be used to read input that has been typed on the keyboard.

> a. input()

b. get\_input()

c. read\_input()

d. keyboard()

20. This built-in function can be used to convert an int value to a float.

a. int\_to\_float()

> b. float()

c. convert()

d. int()

True or False

1. Programmers must be careful not to make syntax errors when writing pseudocode F

programs.

2. In a math expression, multiplication and division takes place before addition and T

subtraction.

3. Variable names can have spaces in them. F

4. In Python the first character of a variable name cannot be a number. T

5. If you print a variable that has not been assigned a value, the number 0 will be F

displayed.

## Knowledge Lists and Tuples <---------------------------------->##

Multiple Choice

1. This term refers to an individual item in a list.

> a. element

b. bin

c. cubby hole

d. slot

2. This is a number that identifies an item in a list.

a. element

> b. index

c. bookmark

d. identifier

3. This is the first index in a list.

a. -1

b. 1

> c. 0

d. The size of the list minus one

4. This is the last index in a list.

a. 1

b. 99

c. 0

> d. The size of the list minus one

5. This will happen if you try to use an index that is out of range for a list.

a. a ValueError exception will occur

> b. an IndexError exception will occur

c. The list will be erased and the program will continue to run.

d. Nothing—the invalid index will be ignored

6. This function returns the length of a list.

a. length

b. size

> c. len

d. lengthof

7. When the \* operator’s left operand is a list and its right operand is an integer, the

operator becomes this.

a. The multiplication operator

> b. The repetition operator

c. The initialization operator

d. Nothing—the operator does not support those types of operands.

8. This list method adds an item to the end of an existing list.

a. add

b. add\_to

c. increase

> d. append

9. This removes an item at a specific index in a list.

a. The remove method

b. The delete method

> c. The del statement

d. The kill method

10. Assume the following statement appears in a program:

mylist = []

Which of the following statements would you use to add the string 'Labrador' to the list at index 0?

a. mylist[0] = 'Labrador'

> b. mylist.insert(0, 'Labrador')

> c. mylist.append('Labrador')

d. mylist.insert('Labrador', 0)

11. If you call the index method to locate an item in a list and the item is not found, this happens.

> a. A ValueError exception is raised

b. An InvalidIndex exception is raised

c. The method returns -1

d. Nothing happens. The program continues running at the next statement.

12. This built-in function returns the highest value in a list.

a. highest

> b. max

c. greatest

d. best\_of

13. This file object method returns a list containing the file’s contents.

a. to\_list

b. getlist

c. readline

> d. readlines

14. Which of the following statements creates a tuple?

a. values = [1, 2, 3, 4]

b. values = {1, 2, 3, 4}

c. values = (1)

> d. values = (1,)

True or False:

1. Lists in Python are immutable. F

2. Tuples in Python are immutable. T

3. The del statement deletes an item at a specified index in a list. T

4. Assume list1 references a list. After the following statement executes, list1 and

list2 will reference two identical but separate lists in memory: F

list2 = list1

5. A file object’s writelines method automatically writes a newline ('\n') after writing

each list item to the file. F

6. You can use the + operator to concatenate two lists. T

7. A list can be an element in another list. T

8. You can remove an element from a tuple by calling the tuple’s remove method F

## Knowledge Repetition Structures <-------------------------------->##

Multiple Choice:

1. A \_\_\_\_\_\_\_\_\_\_ -controlled loop uses a true/false condition to control the number of

times that it repeats.

a. Boolean

> b. condition

c. decision

d. count

2. A \_\_\_\_\_\_\_\_\_\_ -controlled loop repeats a specific number of times.

a. Boolean

b. condition

c. decision

> d. count

3. Each repetition of a loop is known as a(n) \_\_\_\_\_\_\_\_\_\_.

a. cycle

b. revolution

c. orbit

d. iteration

4. The while loop is a \_\_\_\_\_\_\_\_\_\_ type of loop.

> a. pretest

b. no-test

c. prequalified

d. post-iterative

5. A(n) \_\_\_\_\_\_\_\_\_\_ loop has no way of ending and repeats until the program is interrupted.

a. indeterminate

b. interminable

> c. infinite

d. timeless

6. The -= operator is an example of a(n) \_\_\_\_\_\_\_\_\_\_ operator.

a. relational

> b. augmented assignment

c. complex assignment

d. reverse assignment

7. A(n) \_\_\_\_\_\_\_\_\_\_ variable keeps a running total.

a. sentinel

b. sum

c. total

>d. accumulator

8. A(n) \_\_\_\_\_\_\_\_\_\_ is a special value that signals when there are no more items from a list of items to be processed. This value cannot be mistaken as an item from the list.

> a. sentinel

b. flag

c. signal

d. accumulator

9. GIGO stands for

a. great input, great output

> b. garbage in, garbage out

c. GIGahertz Output

d. GIGabyte Operation

10. The integrity of a program’s output is only as good as the integrity of the program’s

a. compiler

b. programming language

> c. input

d. debugger

11. The input operation that appears just before a validation loop is known as the

a. prevalidation read

b. primordial read

c. initialization read

> d. priming read

12. Validation loops are also known as

> a. error traps

b. doomsday loops

c. error avoidance loops

d. defensive loops

True or False:

1. A condition-controlled loop always repeats a specific number of times. F

2. The while loop is a pretest loop. T

3. The following statement subtracts 1 from x: x = x - 1 T

4. It is not necessary to initialize accumulator variables. F

5. In a nested loop, the inner loop goes through all of its iterations for every single iteration of the outer loop. T

6. To calculate the total number of iterations of a nested loop, add the number of iterations of all the loops. F

7. The process of input validation works as follows: when the user of a program enters invalid data, the program should ask the user “Are you sure you meant to enter that?”

If the user answers “yes,” the program should accept the data. F

## Knowledge Strings<------------------------------------------------->##

Multiple Choice:

1. This is the first index in a string.

a. -1

b. 1

> c. 0

d. The size of the string minus one

2. This is the last index in a string.

a. 1

b. 99

c. 0

> d. The size of the string minus one

3. This will happen if you try to use an index that is out of range for a string.

a. a ValueError exception will occur

>> b. an IndexError exception will occur

c. The string will be erased and the program will continue to run.

d. Nothing—the invalid index will be ignored

4. This function returns the length of a string.

a. length

b. size

> c. len

d. lengthof

5. This string method returns a copy of the string with all leading whitespace characters removed.

> a. lstrip

b. rstrip

c. remove

d. strip\_leading

6. This string method returns the lowest index in the string where a specified substring is found.

a. first\_index\_of

b. locate

> c. find

d. index\_of

7. This operator determines whether one string is contained inside another string.

a. contains

b. is\_in

c. ==

> d. in

8. This string method returns true if a string contains only alphabetic characters and is at least one character in length.

> a. The isalpha method

b. The alpha method

c. The alphabetic method

d. The isletters method

9. If you call the index method to locate an item in a list and the item is not found, this happens.

> a. A ValueError exception is raised

b. An InvalidIndex exception is raised

c. The method returns 1

d. Nothing happens. The program continues running at the next statement.

10. This string method returns a copy of the string with all leading and trailing whitespace characters removed.

a. clean

> b. strip

c. remove\_whitespace

d. rstrip

True or False:

1. Once a string is created, it cannot be changed. T

2. You can use the for loop to iterate over the individual characters in a string. T

3. The isupper method converts a string to all uppercase characters. F

4. The repetition operator (\*) works with strings as well as with lists. T

5. When you call a string’s split method, the method divides the string into two substrings. F

"""