Data Programming and Predictive Analyticsfor Business

Duration: 1 hour

Please ensure that this examination paper contains **FIVE** printed pages before you begin the examination.

Instructions: Answer ALL questions. Answers must be written in the answer scripts.

Answer ALL questions.

Question 1 **[TRUE/FALSE]** (10 marks)

(i) Expressions that are tested by the **if** statement are called Boolean expressions.

(ii) Python allows you to compare strings, but it is not case sensitive.

(iii) Reducing duplication of code is one of the advantages of using a loop structure.

(iv) In a nested loop, the inner loop goes through all of its iterations for each iteration of the outer loop.

(v) A **while** loop is called a pretest loop because the condition is tested after the loop has had one iteration.

(vi) Computer programs typically perform three steps: input is received, some process is performed on the input, and output is produced.

(vii) Since a named constant is just a variable, it can change any time during a program's execution.

(viii) A hierarchy chart shows all the steps that are taken inside a function.

(ix) To assign a value to a global variable in a function, the global variable must be first declared in the function.

(x) The **remove** method removes all occurrences of an item from a list.

Question 2 (10 marks)

(i) Which mathematical operator is used to raise 5 to the second power in Python?

A. /
B. **
C. %
D. @

(ii) What is the informal language, used by programmers use to create models of programs, that has no syntax rules and is not meant to be compiled or executed?

A. Flowchart
B. Algorithm
C. Source Code
D. Pseudocode

(iii) The_____keyword is ignored by the Python interpreter and can be used as a placeholder for code that will be written later.

A. placeholder
B. pass
C. pause
D. skip

(iv) A(n) _____ is a variable that receives an argument that is passed into a function.

A. Global Variable
B. Argument
C. Named Constant
D. Parameter

(v) The primary difference between a tuple and a list is that
A. You don't use commas to separate elements in a tuple
B. A tuple can only include string elements
C. A tuple cannot include lists as elements
D. Once a tuple is created, it cannot be changed

(vi) Which of the following would you use if an element is to be removed from a specific index?
A. A *del* Statement
B. A *remove* Method
C. An *index* Method
D. A *slice* Method

(vii) A variable used to keep a running total is called a(n)
A. Accumulator
B. Total
C. Running Total
D. Summer

(viii) When using the _____ logical operator, one or both of the subexpressions must be true for the compound expression to be true.
A. or
B. and
C. not
D. maybe

(ix) A Boolean variable can reference one of two values which are

A. yes or no
B. True or False
C. T or F
D. Y or N

(x) Which method can be used to place an item at a specific index in a list?

A. append
B. index
C. insert
D. add

Question 3 (20 marks)

(a) What is the output of the following statement? (2 marks)

```
print('The path is D:\\sample\\test.')
```

(b) Complete the following code to display 20%. (2 marks)

```
print(f'{_____}')
```

(c) What is the output of the following program? (2 marks)

```
list1 = [1, 2, 3]
list2 = [ ]
for element in list1:
        list2.append(element)
list1 = [4, 5, 6]
```

(d) What values will list2 contain after the following code executes? (2 marks)

```
list1 = [1, 10, 3, 6]
list2 = [item * 2 for item in list1 if item > 5]
```

(e) When will the following loop terminate? (2 marks)

```
while keep_going != 999:
```

(f) What will be displayed after the following code is executed? (2 marks)

```
count = 4
while count < 12:
        print("counting")
        count = count + 2
```

(g) Python provides a special version of a decision structure known as the _____ statement, which makes the logic of the nested decision structure simpler to write. (2 marks)

(h) What does the following expression mean? (2 marks)

```
x <= y
```

(i) Write a line of code to assign a random integer in the range of **1** through **50** to the variable **number.** (2 marks)

(j) What will be the output after the following code is executed? (2 marks)

```
def pass_it(x, y):
        z = x , '', '' , y

num1 = 4
num2 = 8
answer = pass_it(num1, num2)
print(answer)
```