Computer Science 201 Section 60

Fall 2024

Sample Exam for Exam#1

Instructions:

1. Please put your name at the top of every page. Sometimes tests get torn apart and we're not good enough at handwriting analysis to reconstruct everything!

2. This test is closed-book, closed-notes. You may not use any references.

3. You will have 75 minutes from the time you are told to start to complete the test.

4. If you have any questions during the exam, raise your hand and a proctor will come to you

5. This test is worth 80 points. Point values of each question are provided below

Section I: True/False – Multiple Choice. 20 points

Each question is worth 2 points. No partial credit is given on these questions. Please clearly indicate what you think the right answer is.

1. Which of the following is not a legal Python variable name?

    a. 2LiveCrew

    b. _Blink182

    c. UB40

    d. They are all legal Python variable names

2. What are the four types of program flow control we've covered so far this semester?

a. for each loops, for I loops, while loops and if statements

b. sequential, conditional, iterative, functions

c. iterative, loops, if statements and operator precedence

d. None of the above is correct

3. Which of the following types of loops we have studied is the most general type of loop in Python?

a. while loops

b. for each loops

c. for I loops

d. do loops

4. True or false: in the list variable

```
Mid_Atlantic_State = ["Maryland", "Delaware", "Virginia", "New Jersey"]
```

You can get rid of the element "Maryland" using the statement

```
Mid_Atlantic_State.del(0)
```

a. True

b. False

5. Suppose I have the following Python program:

```
def area(y, x):
     triangle_area = 0.5* y * x
     return triangle_area
if __name__ == "__main__":
     x = 3
     y = 4
     result = area(x,y)
     print(result)
```

True or false – the result printed will be 6?

   a. True

   b. False

6. What is the value of 9%2?

   a. 4

   b. 4.5

   c. 1

   d. None of the above answers is correct

7. What happens if a function has no return statement?

   a. The function has no return value

   b. The function returns the value None

   c. It is an error and the program will not run

   d. None of the above answers is correct

8. True or false: in a Python for I loop; e.g

```
for I in range(start, stop, step):
```

The step value must be a positive integer?

a. True

b. False

For both questions 9 and 10, presume we have the following Python program:

```
def calc_area (base, height):
    area = 0.5 * base * height
    print(area)
    return area/2

if __name__ == "__main__":
    base = 5
    height = 2
    area = calc_area (base, height)
    print(area)
```

A

B

9. What is the value printed out by the print statement at location A?

a. 5

b. 10

c. 2

d. Nothing; this statement is an error.

10. What is the value printed out by the print statement at location B?

a. 5

b. 10

c. 2

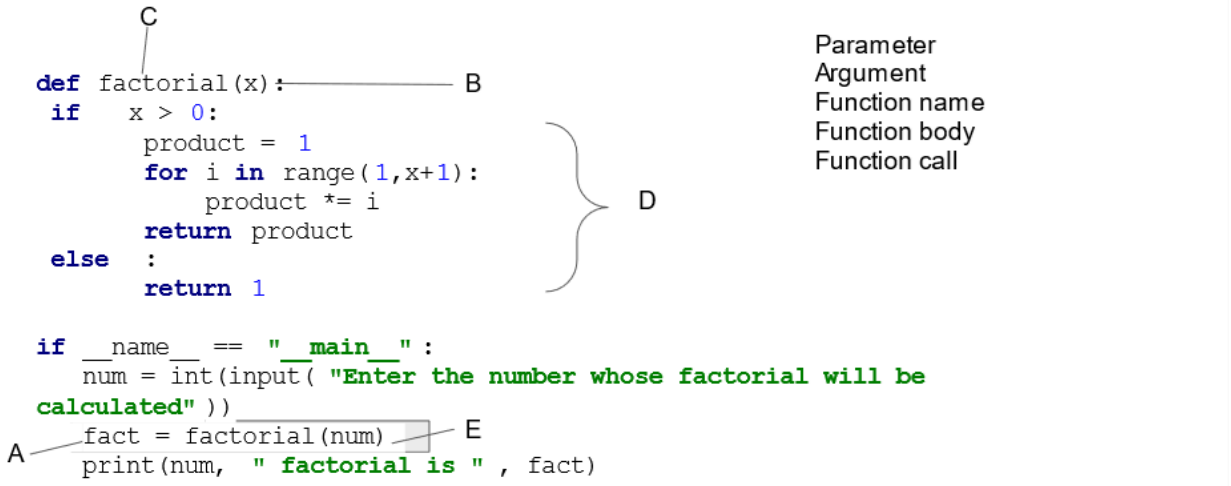
d. Nothing; this statement is an error.

Section 2 Short answer – 30 points

Each of these questions is worth 5 points. Partial credit WILL be given for these questions. If you leave the question blank you will get 0 points for the question, so please do not leave any question unattempted.

11. Briefly describe what the Python symbol table is and what it's used for. No more than two sentence, please.

12. Match the parts of the function in the program below with the appropriate name



13. Given the list

```
States= ["Alabama","Alaska","Arizona","Arkansas","California",
"Colorado", "Connecticut", "Delaware","Florida","Georgia","Hawaii",
"Idaho","Illinois","Indiana","Iowa","Kansas", "Kentucky","Louisiana",
"Maine","Maryland","Massachusetts","Michigan","Minnesota",
"Mississippi","Missouri","Montana", "Nebraska","Nevada",
"New Hampshire","New Jersey","New Mexico","New York","North
Carolina", "North Dakota", "Ohio","Oklahoma","Oregon",
"Pennsylvania",
  "Rhode Island", "South Carolina", "South Dakota","Tennessee",
"Texas", "Utah", "Vermont","Virginia", "Washington",
"West Virginia","Wisconsin","Wyoming"]
```

Create a new variable, n_states, that contains all the states from “Nebraska” to “North Dakota”, inclusive. Write legal Python – not the whole program, just the statement(s) you need.

Hint: there are a couple of different ways to do this; I’ll accept either of them.

14. What is the difference between the insert() method and the append() method for lists in Python?

15. Lists are kind of like strings. If I have a list, nums = {1,2,3,4,5] I can change it to be [1,2,5,4,5] with the statement

```
nums[2] = 5
```

What happens if I had a string, num = “12345” and I tried to change it to be “12545” with the statement

```
num[2] = "5"
```

16. What is the difference between the pop() method and the remove() method for lists in Python?

Section 3: Programming – 30 points

Each of these questions is worth 15 points. Partial credit WILL be given for these questions. If you leave the question blank you will get 0 points for the question, so please do not leave any question unattempted.

17. Write a Python program that prompts a user for three integers, adds those integers up, and prints out the total of the three integers. No error checking is needed; you can assume the user gives you three integers. Note: you can do this in a loop or with separate input statements; your choice.

18. Write a Python program that prompts the user to enter a student record on a single line. A student record consists of a last name followed by a comma; a first name followed by a comma, a student id followed by a comma, and then the student's major. Once this is read in, split the student record into a list of four strings. The first list element is the last name; the second list element is the first name; the third list element is the student ID, and the last list element is the student's major. Then change the student's major to be "Physics." Then use a "for i" loop to print out the student record, one element per line.