CSI 11

Midterm Study Guide

Here you can find the type of the questions that you might be asked on the Midterm Exam

1 True/False and Multiple Choice Questions

You may use your lecture notes, lecture slides, zyBooks, and Python Interpreter.

1. A physical devices that a computer is made of are referred to as _____

    (a) software   (b) hardware   (c) tools   (d) the operating system

2. A switch/bit which is turned off represents the following value:

    (a) 1   (b) -1   (c) 0   (d) 10

3. A byte is made up of eight _____

    (a) CPUs   (b) instructions   (c) variables   (d) bits

4. A set of 128 numeric codes that represent English letters, various punctuations marks, and other characters is _____

    (a) ASCII   (b) binary numbering   (c) Unicode   (d) ENIAC

5. Which identifier is not a legal identifier in Python?

    (a) get5cats   (b) 5catsGet   (c) _get5cats   (d) get_me_those_5_cats

6. A string literal must be enclosed in :

    (a) parentheses   (b) single-quotes   (c) double-quotes   (d) square brackets

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

    (a) &   (b) *   (c) **   (d) #

8. Which of the statements will cause an error?

    (a) `x = 8`   (b) `8 = x`   (c) `x = '8'`   (d) `x = 917364`

9. This operator performs integer division

    (a) //   (b) %   (c) /   (d) **

10. This built-in function is used to read input that has been typed on the keyboard

    (a) print()   (b) get_input()   (c) read_input()   (d) input()

11. This built-in function can be used to convert an `int` value to `float`.

    (a) convert()   (b) float()   (c) int()   (d) int_to_float()

2 Questions for understanding the code

You may use your lecture notes, lecture slides, and zyBooks only.
You cannot use Python Interpreter.

1. What does the following piece of a program do? Show the output.

```
a = 12.6
b = 6.7
print(int(a)+int(b))
print(a+b)
```

2. What does the following piece of a program do? Show the output.

```
a = 11
b = 2
print(a+b)
print(a,b)
print(a//b)
print(a%b)
print(a*b)
print(b**3)
```

3. What does the following piece of a program do? Show the output.

```
a = "Hello"
b = "David"
print(a,b)
print(a + b)
print(a + "," + b)
print(a*4)
```

4. Consider the following program:

```
from math import sqrt

a = int(input("Enter a positive integer:"))

print("the result is",sqrt(a))
```

(a) What does the following piece of a program produce if the user enters 4?
(b) What does the following piece of a program produce if the user enters 36?

5. What does the following piece of a program do? Show the output.

```
a = 5
b = "David"
print("%s is %d years old" % (b,a))
```

6. What does the following piece of a program do? Show the output.

```
st1 = [1,7,2,4,3]
st2 = [1,9,3,5,4]
print(st1[0]+st2[3])
print(st1[3]*st2[1])
print(len(st1))
st1.append(10)
print(st1)
st2.pop()
print(st2)
st2.remove(9)
print(st2)
print(max(st1))
```

7. What does the following piece of a program do? Show the output.

```
collEnr = {
  "BCC": 7146,
  "BMCC": 16479,
  "Guttman": 903,
}

collEnr["LaGuardia"]= 10838
collEnr["BMCC"] = 18479

print(collEnr)

total= collEnr["BCC"] + collEnr["BMCC"] + collEnr["Guttman"]

print("total enrollment in all three colleges in the Fall 2017 is",total)

del collEnr["BMCC"]

print("BMCC's enrollment in the Fall 2017 is %d" % collEnrollment["BMCC"])
```

3 Programming Questions

You may use your lecture notes, lecture slides, zyBooks, and Python Interpreter.
All the programs are to be sent to my e-mail natna20@gmail.com as a separate file and attachment. Don't forget to test your program before submitting it.

1. Write a program that prompts the user to input four decimal numbers, then returns their sum, average and product.

   Here is an example of the input prompt and output:

   _____

   Enter a first decimal number: 12.6

   Enter a second decimal number: 2.1

   Enter a third decimal number: 1

   Enter a fourth decimal number: 2

   _____

   Their sum is 17.7, their average is 4.425, and their product is 52.92

   _____

2. Write a program that

   1) creates a *Python list* of values: 9, 1, 76, 0, and 9, then

   2) displays it,

   3) displays its greatest element (by using the built-in function `max`),

   4) displays its smallest element (by using the built-in function `min`),

   5) displays the length of the list (also by using a built-in function `len`).

3. Write a program that:

   1) creates a dictionary for the following association key:value

Key	Value
Diana	(11,22,33)
Tom	(66,22,33)
Ben	(66,23,13)
Jerry	(66,24,16)
Chloe	(11,55,66)

   2) displays the entire dictionary, and then

   3) displays the record for Chloe

4. I'm writing a program that takes three words from the user, concatenates all three words with the spaces in between them and stores the result in a variable `result`, then displays the `result`. I started writing the program, but I didn't finish it. Finish it please.

```
word1 = input("Please enter the first word:")
word2 = input("Please enter the second word:")
word3 = input(

result = word1 +

print(
```

5. The formula for calculation of the area of a triangle of height h and base b is $A = \frac{1}{2}hb$. Write a program that prompts the user to enter the height and the base of a triangle, calculates its area and displays the result.

   Here is an example of the input/output:

   _____

   This program calculates the area of triangle.

   Enter the height: 3

   Enter the base length: 8

   _____

   The area of triangle of height 3 and base length 8 is 12.

6. Write a program that coverts Celsius temperatures to Fahrenheit temperatures. The formula for conversion is

   $$F = \frac{9}{5}C + 32$$

   The program should ask the user to enter a temperature in Celsius, and then display the temperature converted to Fahrenheit.

   Here is an example of the input/output:

   _____

   This program converts from Celsius degrees to Fahrenheit degrees.

   Enter the Celsius degrees: 28

   _____

   Fahrenheit degrees: 82.4

4   Other types of questions

You may use your lecture notes, lecture slides, zyBooks, and Python Interpreter. You may use `Python Interpreter` or `Calculator` to check your answer, but make sure you show all your work.

1. What is *binary number* 1101 as a *decimal number* (i.e. $(1101)_2 =$?)

2. Convert *hexadecimal number* $(1F4)_{16}$ to its *decimal form* and *binary form*

3. Convert *decimal number* 183 to its *hexadecimal form*

4. Convert *decimal number* 87 to its *binary form*

5. A computer communicates via the Internet by sending a **packet**. A **packet** is

   (a) a physical mechanisms used to send information

   (b) specifies how to communicate over the Internet

   (c) a piece of information routed through a computer network

6. **Internet Protocol version 4 (IPv4)** has

   (a) 16-bit addresses   **(b)** 32-bit addresses   **(c)** 64-bit addresses

   (d) 128-bit addresses

7. Search engines `speed up searching` by using

   (a) web browsers

   (b) links

   (c) indexing