**Introduction to Computer Programming (COP 3223) Test #1**

**First Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Last Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1) (6 pts) What is the output of the following print statement in python? Please put a box around your answer.

print ("Sally said,\"Hi, Bob.\nGood to see you.\"\nnight night.")

2) (4 pts) Write a single statement to read in a person’s gpa into a variable named, gpa. Prompt them with the following: “Please enter your GPA.”

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3) (10 pts) What is the value of each of the following arithmetic expressions in python?

a) 6 + 2\*4 \_\_\_\_\_\_\_\_\_ f) 3\*(5%7) \_\_\_\_\_\_\_\_\_

b) 3\*(16//3) \_\_\_\_\_\_\_\_\_ g) 7.7%2.1 \_\_\_\_\_\_\_\_\_

c) 3\*(16/3) \_\_\_\_\_\_\_\_\_ h) 16/(5 + 105%6) \_\_\_\_\_\_\_\_\_

d) 15 – 74%5 \_\_\_\_\_\_\_\_\_ i) 18 + 19%20 \_\_\_\_\_\_\_\_\_

e) 3\*5%7 \_\_\_\_\_\_\_\_\_ j) -18//4 \_\_\_\_\_\_\_\_\_

4) (10 pts) What is the output of the following segment of code in python? (Note: you should have 10 numbers separated by spaces all on one line.

start = 5

for i in range(10):

print(start, end=" ")

start = 2\*start – 4

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5) (5 pts) What is the output of the following segment of code in python? (Note: you should have 5 numbers separated by spaces all on one line.

a = 1

b = 1

for i in range(5):

c = a + b

print(c, end=" ")

a = b

b = c

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6) (5 pts) Explain in English the pattern of the sequence of numbers printed out by the loop in question #5. Note that this pattern persists if we replace 5 with any larger number.

7) (5 pts) What is the output of the following segment of code in python?

a = 5

b = 7

if a > 4:

print("V", end="", sep="")

elif a > 3 and b > 4:

print("W", end="", sep="")

if a > 4:

print("X", end="", sep="")

if a > 3 and b > 4:

print("Y", end="", sep="")

if a > 5 or b < 7:

print("Z", end="", sep="")

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8) (10 pts) Complete the segment of code below that asks the user to enter a word in all uppercase letters and then prints out the word with all of its vowels (A,E,I,O, and U) removed. (Hint: loop through each letter of the string and only print it if it’s not in the vowel string. Remember to use the in operator!)

VOWELS = "AEIOU"

myWord = input("Please a word, uppercase letters only.\n")

for i in range( \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ):

if \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ :

print( \_\_\_\_\_\_\_\_\_\_\_\_\_\_ , end="", sep = "")

9) (15 pts) Sandwich-Your-Way is running a promotional sale on campus. Typically, a sandwich costs $5 each. However, if you buy more than 3 sandwiches, the cost of the 4th and future sandwiches, up to the 9th sandwich, is only $4 per sandwich. Finally, if you buy 10 or more sandwiches, the cost of the 10th and future sandwich is only $3 per sub. (Thus, the cost of 13 sandwiches is 3 x $5 + 6 x $4 + 4 x $3 = $51 and the cost of 5 sandwiches is 3 x $5 + 2 x $4 = $23.) Complete program below so that it asks the user how many sandwiches they want and prints out their total bill in dollars.

REG\_COST = 5

MID\_COST = 4

LOW\_COST = 3

def main():

numSandwiches = int(input("How many sandwiches are you buying?\n"))

main()

10) (10 pts) Write a segment of code that creates a list with the items ‘car’, ‘boat’, ‘bike’, ‘bus’, ‘plane’, and ‘helicopter’, asks the user to enter a mode of transportation and prints ‘Great, we have it’ or ‘Sorry, you can not travel that way’, depending on whether or not what they entered is in the list. (In order to be in the list, what the user enters has to be a perfect, case-sensitive match. Also, don’t print any quotes.)

11) (19 pts) Complete the program below to take in a positive integer n > 1 from the user and print out whether or not the number is a perfect number, an abundant number, or a deficient number. A perfect number is one where the sum of its proper divisors (the numbers that divide into it evenly not including itself) equals the number. An abundant number is one where this sum exceeds the number itself and a deficient number is one where this sum is less than the number itself. For example, 28 is perfect since 1 + 2 + 4 + 7 + 14 = 28, 12 is abundant because 1 + 2 + 3 + 4 + 6 = 16 and 16 is deficient because 1 + 2 + 4 + 8 = 15.

def main():

n = int(input("Please enter a positive integer.\n"))

sumFactors = 0

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if \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ :

print(n, "is deficient.")

elif \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ :

print(n, "is abundant.")

else:

print(n, "is perfect. ")

main()

12) (1 pt) The new Miss America, Nina Davuluri, became the first Indian-American to be crowned Miss America. In what country were her parents born?

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**Scratch Page – Please clearly mark any work on this page you would like graded.**