PYTHON WORKSHEET – WORKSHEET 4

Q1 to Q8 have only one correct answer. Choose the correct option to answer your question.

1. Which of the following function is used to determine the length of a string in python?
   A) length() B) len()
   C) strlen() C) stringlen()
   ANS B
2. Python is?
   A) compiled B) interpreted
   C) compiled then interpreted D) none of these
   ANS B
3. What will be the output of the following?

```
a = [1,2,3,2,1]
a.pop(2)
print(a)
```

   A) [1,3,2,1] B) [1,2,2,1]
   C) [1,2,3,1] D) [1,3,1]
   ANS B
4. If alist = [10,20,30,40,50,60], then alist[: : -3] = ?
   A) [40,30,20,10] B) [30,20,10]
   C) [60,30,10] D) [60,30]
   ANS D
5. Which of the following will give the reverse of list ‘a’:
   A) a[-1:0] B) a[-1:-4]
   C) a[: :-1] D) a[0:-1:-1]
   ANS C
6. If a = True, b = False and c = True. Then what will be the output of following code:

```
if not a or b:
    print("Eena")
elif not a or not b and c:
    print("Meena")
elif not a or b or not b and a:
    print("Deeka")
else:
    print("Domniqaa")
```

   A) Eeena B) Meena
   C) Deeka D) Domniqaa
   ANS B
7. What is the output of the following?
   print ([x+y for y in [“Hello ”, “Adios ”] for x in [“World ”, “Python ”]])
   A) [“Hello World ”, “Hello Python ”, “Adios World ”, “Adios Python ”]
   B) [“Hello World ”, “Adios World ”, “Hello Python ”, “Adios Python ”]
   C) [“World Hello ”, “Python Hello ”, “World Adios ”, “Python Adios ”]
   D) [“World Hello ”, “World Adios ”, “Python Hello ”, “Python Adios ”]
   ANS C
8. Str1 = “Hello Python”. What will be the output of : print(str1.find(‘o’))
   A) 4 B) 4,10
   C) 5,11 D) 5
   ANS A

Q9 and Q10 have multiple correct answers. Choose all the correct options to answer your question.

9. Which of the following is(are) correct method(s) to join two lists l1 and l2?
   A) l1+l2
   B) l1.append(l2)
   C) append(l1,l2)
   D) l1.extend(l2)
   ANS D

10. s = “pyworld”. Select all of the following which give same results?
A) s[0]+s[-1] B) s[: : -1][-1] + s[len(s)-1]
C) s[: : -6] D) s[: : -1][: : -6]
ANS A,B,D

Q11 to Q13 are subjective questions, answer them briefly

11. Differentiate between a compiler and an interpreter? Which of them is used in python language?

Compiler:

It is a translator which takes input i.e., High Level Language and produces an output of low level language i.e. machine or assembly language.
Compiler is more intelligent than an assembler it checks all kinds of limits, ranges, errors etc.
But it’s program run time is more and occupies a larger part of memory. It has slow speed because a compiler goes through the entire program and then translates the entire program into machine codes.

Interpreter:

An interpreter is a program which translates a programming language into a comprehensible language. –It translates only one statement of the program at a time.
Interpreters, more often than not are smaller than compilers.

S.NO.	COMPILER	INTERPRETER
1.	Compiler scans the whole program in one go.	Translates program one statement at a time.
2.	As it scans the code in one go, the errors (if any) are shown at the end together.	Considering it scans code one line at a time, errors are shown line by line.
3.	Main advantage of compilers is it’s execution time.	Due to interpreters being slow in executing the object code, it is preferred less.
4.	It converts the the instructions into systematic code.	It doesn’t convert the instructions instead it directly works on source language.
E.g.	C, C++, C# etc.	Python, Ruby, Perl, SNOBOL, MATLAB

12. What is the purpose of PYTHONPATH environment variable?
Python’s behavior is greatly influenced by its environment variables. One of those variables is PYTHONPATH. It is used to set the path for the user-defined modules so that it can be directly imported into a Python program. It is also responsible for handling the default search path for Python Modules. The PYTHONPATH variable holds a string with the name of various directories that need to be added to the sys.path directory list by Python. The primary use of this variable is to allow users to import modules that are not made installable yet.

13. How will you remove all the leading and trailing whitespaces in a string in python? Give one example.
The lstrip() method will remove leading whitespaces, newline and tab characters on a string beginning. You can use it in the following way:

```
'    hello world!'.lstrip()
 'hello world!'
```

The method rstrip() which returns a copy of the string in which all specified chars have been stripped from the end of the string. The default char to be trimmed is whitespace. For example:

```
'  Hello  '.rstrip()
              '  Hello'
```

Q14 and Q15 are programming questions. Answer them in Jupyter Notebook.

14. Write a python program to represent a user entered number in expanded form.
For eg: user_input = 12345
Output = 1*10000 + 2*1000 + 3*100 + 4*10 + 5*1

```
def expanded_form(num):
  result = []

  for index, digit in enumerate(str(num)[::-1]):
     if int(digit) != 0:
        result.append(digit +('0' * index))

  return ' + '.join(result[::-1])
  expanded_form(2345)
```

15. Write a python program to determine whether the number entered by the user is an Armstrong number or not?

```
# Python program to check if the number is an Armstrong number or not

# take input from the user
num = int(input("Enter a number: "))

# initialize sum
sum = 0

# find the sum of the cube of each digit
temp = num
while temp > 0:
   digit = temp % 10
   sum += digit ** 3
   temp //= 10

# display the result
if num == sum:
   print(num,"is an Armstrong number")
else:
       print (num,"is not an Armstrong number")
```