Python Interview Solutions

Estimated Time of Completion : 45 minutes

Marking Scheme : 70 marks (5 marks each question)

Q1. Which of the following statements create a dictionary? One or more options may be correct.

1. **dict = {“david”:14, 24:”alex”, 35:”john”}**
2. **dict = { “peter”, 24, ”alex”, 35 }**
3. **dict = {“david”:14, ”peter”:24, “alex”:35}**
4. **dict = (“a”:1 , ”b”:2, “c”:3, “d”:4)**

Correct Answer: Option 1 & Option 3

Q2. What is the exact command to divide 16 by 3 and get result as 5?

1. **16/3**
2. **16//3**
3. **16%3**
4. **16**3**

Correct Answer: Option 2 (Integer Division)

Q3. What is the output of the following code ?

```
A0 = dict(zip(('a', 'b' ,'c' ,'d' ,'e'),(1,2,3,4,5)))
print (A0)
```

1. **('a', 1, 'b', 2, 'c', 3, 'd', 4, 'e', 5)**
2. **('a', 1), ('b', 2), ('c', 3), ('d', 4), ('e', 5)**
3. **{'a': 1, 'b': 2, 'c': 3, 'd': 4, 'e': 5}**
4. **{('a', 1),('b', 2), ('c', 3), ('d', 4), ('e', 5)}**

Correct Answer: Option 3

Q4. Write a python program to print the numbers of the given list after removing even numbers from the list.

nums = [5, 7, 8, 9, 12, 15, 17, 18, 21, 22, 24]

Correct Answer: Method 1

```
nums = [5, 7, 8, 9, 12, 15, 17, 18, 21, 22, 24]
for i in nums:
      if i%2==0:
            continue
      print (i)
```

Correct Answer: Method 2 (Alternate Method)

```
nums = [5, 7, 8, 9, 12, 15, 17, 18, 21, 22, 24]
for i in nums:
      if i%2==0:
            nums.remove(i)
print (nums)
```

Q5. Write a program to print the reverse of a list.

Correct Answer:

```
nums = [1, 2, 3, 4, 5]

print(nums[::-1])
```

Q6. What is the correct output of the following code?

```
D = dict()
for x in enumerate(range(5),1):
      D[x[0]] = x[1]
      D[x[1]+7] = x[0]
print(D)
```

1. **{7: 0, 8: 1, 9: 2}**
2. **{1: 0, 7: 1, 2: 1, 8: 2, 3: 2, 9: 3}**
3. **{7: 1, 8: 2, 9: 3}**
4. **{0: 0, 7: 0, 1: 1, 8: 1, 2: 2, 9: 2}**

Correct Answer: Option 2

Q7. What is the correct output of the following code?

```
num = 7
if num > 3:
        print(“3”)
        if num < 5:
                print(“5”)
                if num ==7:
                        print(“7”)
```

1. **3 7**
2. **3 5 7**
3. **3**
4. **7**

Correct Answer: Option 3

Q8. What is Recursion? Write a function to print factorial of a number. Assume the number is taken as user input.

Correct Answer: The process in which a function calls itself directly or indirectly is called recursion and the corresponding function is called as recursive function.

```
def factorial(num,fact):
    if num<=0:
        print("Please enter a positive number")
    elif(num>1):
        fact=fact*num
        num=num-1
```

```
        return factorial(num,fact)
    else:
        return fact
number = int(input("Please enter a number: "))
fact=1
result=factorial(number,fact)
print(result)
```

Q9. Explain the difference between list, tuple and sets?

Correct Answer: A list is different from tuple mainly because a list allows further alteration after being initialized while a tuple is immutable in nature and does not allow modifications once it is declared. A set is different from a list or a tuple because it only allows unique elements to be entered within a set.

Q10. Using string slicing print the following substrings from the given string?

str = ‘character’

1. *act* .
2. *tcarahc*

Correct Answer (1. act) :

```
str1 ='character'
print(str1[4:7])
```

Correct Answer (1. tcarahc) :

```
str1 ='character'
print(str1[-3::-1])
```

Q11. Write a function that prints unique items from the list. For example, [4,5,4,3,6,6,12,2,5,3] should return [4,5,3,6,12,2].

Correct Answer :

```
def uniqueList(OldLs):
    newLs = []
    for i in OldLs:
        if i not in newLs:
            newLs.append(i)
    return list(newLs)
print(uniqueList([4,5,4,3,6,6,12,2,5,3]))
```

Q12. Replace the pass keyword with the right expression to get the required output?.

REQUIRED OUTPUT: {0: 1, 1: 1, 2: 1}

```
D = dict()
for i in range (3):
   for j in range(2):
      pass
print(D)
```

Correct Answer : `D[i]=j`

Q13. Define Singleton Design Pattern?

Correct Answer :

A Singleton design pattern allows you to make use of singleton classes that makes sure only one instance of it is ever created. Typically, such a class is used to manage resources that by their nature can exist only once. In classic singleton in Python, we check whether an instance is already created. If it is created, we

return it; otherwise, we create a new instance, assign it to a class attribute, and return it.

Q14. Using Method Resolution Operator, select the correct algorithm search path that will be used by python in the given below code.

```
class A:
        def who_am_i(self):
        print("I am a A")

class B(A):
        def who_am_i(self):
        print("I am a B")

class C(A):
        def who_am_i(self):
        print("I am a C")

class D(B,C):
        def who_am_i(self):
        print("I am a D")

d1 = D()
d1.who_am_i()
```

1. **D, B, C, A**
2. **D, B, A, C**
3. **D, C, A**
4. **D, B**

Correct Answer :

D, B, A, C