Section 1: Multiple Choice Questions (20 Questions , 2 Marks Each)

Strings (2 Questions)

1. What will be the output of the following code?

s = “PythonProgramming”

print(s[2:10:2])

a) toPorm

b) tPg

c) toPg

d) hnrg

ANSWER: topo

2. What does ”hello” .replace(‘l’,’ ‘) return?

a) Heo

b) Helo

c) Hello

d) H

ANSWER: a)he o

Lists and Tuples (3 Questions)

3. What will be the output?

lst = [1, 2, 3]

lst.extend([4, 5])

print(lst)

a) [1, 2, 3, [4, 5]]

b) [1, 2, 3, 4, 5]

c) [1, 2, 3]

d) [1, 2, 3, (4, 5)]

ANSWER: b)[1,2,3,4,5]

4. Which of the following statements is incorrect regarding tuples?

a) Tuples are immutable.

b) Tuples consume less memory than lists.

c) Tuples support item assignment.

d) Tuples can contain mutable objects.

ANSWER: C

5. What will tuple([1, 2, 3, 4]) return?

a) (1, 2, 3, 4)

b) [1, 2, 3, 4]

c) {1, 2, 3, 4}

d) None

ANSWER: A

List Slicing (2 Questions)

6. What does lst[-3:-1] return for lst = [10, 20, 30, 40, 50] ?

a) [30, 40]

b) [40, 50]

c) [30, 40, 50]

d) [20, 30]

ANSWER: A

7. What does list[::-1] return for list = [‘a’,‘b’,’c’,’d’] ?

a) [‘a’,’b’,’c’,’d’]

b) [‘d’,’c’,’b’,’a’]

c) [‘c’,’d’]

d) [‘b’,’a’]

ANSWER: B

List Comprehension (2 Questions)

8. What does [x\*\*2 for x in range(5) if x % 2 == 0] return?

a) [0, 4, 16]

b) [1, 4, 9, 16]

c) [0, 1, 4, 9, 16]

d) [0, 2, 4]

ANSWER: A

9. Identify the incorrect list comprehension syntax:

a) [x for x in range(10) if x % 2 == 0]

b) [x for x in range(10) x % 2 == 0]

c) [x+1 for x in range(3)]

d) [x for x in range(3) if x &gt; 1]

ANSWER: B

Range (2 Questions)

10. What is the output of range(1, 5, 2) in list form?

a) [1, 3]

b) [1, 2, 3, 4]

c) [1, 2, 3, 4, 5]

d) [1, 2, 4]

ANSWER: A

11. What happens if range(5, 1, 1) is executed?

a) [5, 4, 3, 2, 1]

b) [5, 4, 3, 2]

c) []

d) [5]

ANSWER: D

Dictionaries &amp; Dictionary Comprehension (3 Questions)

12. What is the output of the below?

d = {‘x’: 1,’y’: 2}

d.update({‘y’: 3,’z’: 4})

print(d)

a) {‘x’ : 1, ‘y’ : 3, ’z’ : 4}

b) {‘x’ : 1, ‘y’ : 2 , ‘z’ :4}

c) {‘x’ : 1, ‘y’ : 2}

d) {‘x’ : 1, ‘z’ : 4}

ANSWER: A

13. What does {x: x\*\*3 for x in range(2, 5)} return?

a) {2: 8, 3: 27, 4: 64}

b) {2: 4, 3: 9, 4: 16}

c) {2: 6, 3: 9, 4: 12}

d) {2: 3, 3: 6, 4: 9}

ANSWER: A

14. What will list(d.keys())[0] return for d = {‘a’ : 100, ‘b’ : 200} ?

a) 100

b) ‘a’

c) ‘b’

d) None

ANSWER: B -’a’

Functions (6 Questions)

15. What is the output?

def f(x, y=[]):

y.append(x)

return y

print(f(1))

print(f(2))

a) [1] [2]

b) [1] [1, 2]

c) [1] []

d) Error

ANSWER: B

16. What will lambda x: x \* x return when x = 3 ?

a) 6

b) 9

c) 3

d) None

ANSWER: B

17. Which function is used to filter elements from an iterable?

a) map()

b) reduce()

c) filter()

d) apply()

ANSWER: C

18. What is the output?

from functools import reduce

reduce(lambda x, y: x \* y, [1, 2, 3, 4])

a) 10

b) 24

c) [1, 2, 3, 4]

d) None

ANSWER: B

19. What does filter(lambda x: x > 2, [1, 2, 3, 4]) return?

a) [3, 4]

b) [1, 2]

c) [1, 2, 3, 4]

d) []

ANSWER: A

20. Write a function that accepts a variable number of arguments and prints them.

ANSWER: \*\*args

Section 2: Coding Challenges (10 Questions , 4 Marks Each)

1. Reverse a string without using slicing

def reverse\_string(s):

return s[::-1]

print(reverse\_string(“hello“)

# Example

print(reverse\_string(“Python”))

ANSWER: “olleh”

2. Write a function to remove duplicates from a list

def remove\_duplicates(lst):

Return (list(set(lst))

print(remove\_duplicates([1,2,3,4,2,3,4])

# Example

print(remove\_duplicates([1, 2, 2, 3, 4, 4, 5]))

Expected Output:[1, 2, 3, 4, 5]

ANSWER: [1,2,3,4]

3. Write a dictionary comprehension that reverses keys and values

def reverse\_dict(d):

return {value:key for key, value in d.items()}

print(reverse\_dict({‘a’:1,’b’: 2, ‘c’ :3}))

# Example

print(reverse\_dict({‘a’ : 1, ‘b’ : 2, ‘c’ : 3}))

Expected Output:{1: ‘a’, 2 : ‘b’, 3: ‘c’}

ANSWER:{1: ‘a’, 2 : ‘b’, ‘c’ : 3}

4. Implement map() to find the cube of a list of numbers

def cube\_numbers(lst):

return[x\*\*3 if x in (lst)]

print (cube\_numbers([1,2,3,4])

# Example

print(cube\_numbers([1, 2, 3, 4]))

Expected Output:[1, 8, 27, 64]

ANSWER:[1,8,27,64]

5. Implement a function using filter() to remove vowels from a string

def remove\_vowels(s):

# Your code here

# Example

print(remove\_vowels(“hello world”))

Expected Output:”hll wrld”

ANSWER:

6. Write a function that returns a dictionary of squares from 1 to n

def squares\_dict(n):

return{n:n\*\*2 for n in range(1,n+1)

print(squares\_dict(n))

# Example

print(squares\_dict(5))

Expected Output:{1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

ANSWER:{1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

7. Write a function to merge two dictionaries

def merge\_dicts(d1, d2):

# Example

print(merge\_dicts({‘a’ : 1,’b’ : 2}, {‘b’ : 3, ‘c’ : 4}))

Expected Output:{‘a’: 1, ‘b’ : 3, ‘c’: 4}

ANSWER:

8. Implement reduce() to compute factorial of a number

from functools import reduce

def factorial(n):

result=1

For i in range(1,n+1):

return \*=i

return result

print(factorial(5))

# Example

print(factorial(5))

Expected Output:120

ANSWER:120

9. Write a function to flatten a nested list

def flatten\_list(nested\_lst):

# Example

print(flatten\_list([[1, 2], [3, 4],

[5]]))

Expected Output:[1, 2, 3, 4, 5]

ANSWER:

10. Write a lambda function to check if a number is prime

is\_prime = lambda n: n>1 and all(n%2!=0 for i in range(2, int(n\*\*0.5)+1))

# Example

print(is\_prime(7))

print(is\_prime(10))

Expected Output:

True

False

ANSWER:

True

False