Working with Lists and Dictionaries

Standard difficulty · 20 questions · 40 marks · Time: 40 minutes

Name: _____ Date: _____ Score: ____ / 40

Show your working for Sections B and C. Answers are on the last page — try every question first!

Section A — Choose the correct answer — 8 × 1 = 8 marks

1. The index of the first element of a list is:

(a) −1 **(b)** the length of the list
(c) 1 **(d)** 0

2. What does this print?

```
a = [78, 81, 73, 55, 75, 72]
print(a[4])
```

(a) 55 **(b)** 72 **(c)** 75 **(d)** 73

3. What does this print?

```
a = [12, 16, 38, 14, 59]
print(a[::-1])
```

(a) [59, 14, 38, 16, 12] **(b)** [16, 38, 14, 59]
(c) [59, 38, 16, 14, 12] **(d)** [59, 14, 38, 16]

4. What does this print?

```
print([26, 13] + [54, 47])
```

(a) [[26, 13], [54, 47]] **(b)** [26, 13, 54, 47]
(c) [80, 60] **(d)** [54, 47, 26, 13]

5. What does this print?

```
a = [1, 10, 12, 10, 1, 12, 19]
print(a.index(1))
```

(a) 0 **(b)** 1 **(c)** 4 **(d)** 2

6. What does this print?

```
d = {'Manav': 38, 'Rahul': 63, 'Naina': 51, 'Nikhil': 41}
d['Manav'] = 89
d['Ritu'] = 53
del d['Naina']
print(d['Manav'])
```

(a) 88 **(b)** 38 **(c)** 90 **(d)** 89

7. What does this print?

```
d = {'Naina': 74, 'Tanvi': 99, 'Pooja': 96, 'Ishaan': 86, 'Lakshmi': 90}
print('Pooja' in d)
```

(a) True **(b)** False **(c)** None **(d)** Error

8. What does this print?

```
d = {'Gauri': 94, 'Ishaan': 98, 'Tanvi': 90, 'Naina': 39}
print(max(d.values()))
```

(a) 99 **(b)** 98 **(c)** 39 **(d)** 94

Section B — Short answer — 8 × 2 = 16 marks

9. Distinguish between append() and extend().

10. What is in a at the end? Write the items separated by commas.

```
a = [67, 35, 59, 25, 56, 55]
a.pop(0)
a.pop(3)
a.insert(1, 13)
```

11. What is in a after these lines? Write the items separated by commas.

```
a = [54, 20, 59, 3, 13, 2, 76]
a.sort()
```

12. a = [80, 27, 33, 17, 81]. What are (a) len(a) (b) min(a) (c) max(a) (d) sum(a)?

13. Answer for d at the end: (a) len(d) (b) d['Sahil']

```
d = {'Asha': 80, 'Varun': 54, 'Pooja': 35, 'Ishaan': 75}
d['Ishaan'] = 52
d['Sahil'] = 63
del d['Varun']
```

14. What does this print? Write the names separated by commas.

```
d = {'Tanvi': 52, 'Nikhil': 74, 'Jaya': 67, 'Bhavna': 61, 'Manav': 59, 'Farhan': 86}
for k in d:
    if d[k] >= 60:
        print(k)
```

15. What does this print?

```
a = [35, 58, 11, 23, 59, 19, 16, 54]
a.sort()
print(a[2])
```

16. Answer for d1 after these lines: (a) len(d1) (b) d1['Aarav']

```
d1 = {'Varun': 95, 'Aarav': 76, 'Nikhil': 73}
d2 = {'Aarav': 76, 'Deepa': 98}
d1.update(d2)
```

Section C — Word problems — 4 × 4 = 16 marks

17. Explain any six list methods with an example of each.

18. This program finds the highest and lowest marks. What does it print? Give (a) the first line (b) the second.

```
d = {'Rahul': 61, 'Ritu': 90, 'Zoya': 78, 'Farhan': 93, 'Deepa': 64}
top = 'Rahul'
low = 'Rahul'
for k in d:
    if d[k] > d[top]:
        top = k
    if d[k] < d[low]:
        low = k
print(top, d[top])
print(low, d[low])
```

19. Answer (a) to (c) for this program.

```
a = [45, 47, 6, 37, 27]
a.extend([63, 73])
a.insert(1, 6)
p = a.pop()
print(p)
print(len(a))
print(a.index(6))
```

20. A dictionary stores one student's marks in five subjects. Find (a) sum(marks.values()) (b) the key with the highest value (c) how many subjects have marks of 70 or more.

```
marks = {'Eng': 85, 'Chem': 83, 'Hindi': 96, 'Maths': 41, 'Bio': 48}
```



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Answer key

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Q	Answer	Working
1	**(d) 0**	—
2	**(c) 75**	indexes start at 0, so a[4] is item 5
3	**(a) [59, 14, 38, 16, 12]**	a step of −1 walks the list backwards
4	**(b) [26, 13, 54, 47]**	+ joins two lists
5	**(a) 0**	index() gives the first position of 1
6	**(d) 89**	a later assignment to the same key replaces its value
7	**(a) True**	'Pooja' is a key
8	**(b) 98**	the largest value
9	**append() adds its argument as one element at the end; extend() adds each element of an iterable at the end.**	—
10	**35, 13, 59, 25, 55**	carry out each line in turn
11	**2, 3, 13, 20, 54, 59, 76**	smallest to largest
12	**(a) 5; (b) 17; (c) 81; (d) 238**	count, smallest, largest, total
13	**(a) 4; (b) 63**	d ends as {'Asha': 80, 'Pooja': 35, 'Ishaan': 52, 'Sahil': 63}
14	**Nikhil, Jaya, Bhavna, Farhan**	names with 60 or more, in the order they were added
15	**19**	sorted: [11, 16, 19, 23, 35, 54, 58, 59]; the third smallest
16	**(a) 4; (b) 76**	update() replaces Aarav's value and adds Deepa
17	**append (L.append(5)), insert (L.insert(1, 9)), extend (L.extend([3, 4])), remove (L.remove(9)), pop (L.pop()), sort (L.sort()); also count, index and reverse.**	—
18	**(a) Farhan 93; (b) Rahul 61**	each name is compared with the best and worst so far
19	**(a) 73; (b) 7; (c) 1**	after insert: [45, 6, 47, 6, 37, 27, 63, 73]; pop() removes the last item
20	**(a) 353; (b) Hindi; (c) 3**	values: 85, 83, 96, 41, 48