Chap-10 String Manipulation

1. What is the index of the first character of a string in Python?

a) 0 b) 1
c) -1 d) 2

2. What is the output?

```
s = "PYTHON"
print(s[-1])
```

a) P b) Y
c) N d) O

3. Which operator is used to concatenate two strings?

a) * **b) +**
c) / d) %

4. What is the output?

```
print("Hi" * 3)
```

a) Hi3 b) Hi Hi Hi
c) HiHiHi d) Error

5. Which operator checks whether a value exists in a string?

a) is **b) in**
c) == d) exists

6. What is the output?

```
print("py" in "python")
```

a) True b) False
c) 1 d) Error

7. What is the output?

```
s = "COMPUTER"
print(s[1:5])
```

a) COMP **b) OMPU**
c) OMPUT d) MPUT

8. In string slicing s[start:stop], the stop index is:

a) Included **b) Excluded**
c) Doubled d) Ignored

9. What is the output?

```
s = "PYTHON"

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

a) PYTHON
b) NOHTYP
c) NOHTY
d) Error

10. What does len() return?

a) Last index of a string
b) Number of words
c) Number of characters
d) First character

11. What is the output?

```
s = "Hello World"
print(len(s))
```

a) 10
b) 11
c) 12
d) 9

12. Which method converts a string into uppercase?

a) upper()
b) uppercase()
c) up()
d) capital()

13. What is the output?

```
s = "banana"
print(s.count("a"))
```

a) 2
b) 3
c) 4
d) 1

14. Which method finds the position of the first occurrence of a substring?

a) search()
b) find()
c) position()
d) locate()

15. What does find() return when the substring is not found?

a) 0
b) 1
c) None
d) -1

16. Which method is used to replace one substring with another?

a) change()
b) replace()
c) modify()
d) sub()

17. Which of the following removes whitespace from both ends of a string?

a) trim()
b) remove()
c) strip()
d) space()

1. What is a string in Python?

Answer: A string is a sequence of characters enclosed within single (' ') or double (" ") quotation marks.
Example:
name = "Rahul"

2. What is string indexing?

Answer: String indexing is used to access individual characters of a string. Python starts indexing from **0**.
Example:
s = "PYTHON"
print(s[0])

Output: P

3. What is string traversal?

Answer: String traversal means accessing each character of a string one by one.
Example:
s = "CAT"
for ch in s:
    print(ch)

4. What is string concatenation?

Answer: Concatenation means joining two or more strings using the + operator.
Example:
"Hello" + "World"

Output: HelloWorld

5. What are membership operators?

Answer: Membership operators are in and not in. They check whether a character or substring is present in a string.
Example:
"py" in "python"

Output: True

6. What are comparison operators used with strings?

Answer: Comparison operators are used to compare two strings. Common operators are ==, !=, <, >, <=, and >=.
Example:
"abc" == "abc"

Output: True

7. What is string slicing?

Answer: String slicing means extracting a part of a string.
Syntax:
s[start:stop:step]
Example:
s = "COMPUTER"
print(s[0:4])

Output: COMP

8. What do start, stop, and step mean in slicing?

Answer:

- **start** → starting index
- **stop** → ending index, **not included**
- **step** → number of positions to move

Example:
s[0:6:2]

9. How can you reverse a string using slicing?

Answer: We can use [::-1].
Example:
s = "PYTHON"
print(s[::-1])

Output:
NOHTYP

10. What is the use of the len() function?

Answer: len() returns the total number of characters in a string.
Example:
s = "Python"
print(len(s))

Output: 6

11. Write any four important string methods.

Answer:

- upper() → converts to uppercase
- lower() → converts to lowercase

- count() → counts occurrences
- replace() → replaces a substring

Example:
s = "hello"
print(s.upper())

Output: HELLO

12. Why are strings called immutable?

Answer: Strings are called **immutable** because their individual characters cannot be changed after the string is created.
Example:
s = "Hello"
s[0] = "Y"

Long Questions

1.What are membership operators? Explain with an example.

Answer:
The membership operators are:

- in — checks whether a character or substring is present.
- not in — checks whether it is absent.

s = "Python"
print("P" in s)
print("z" not in s)

Output:

True
True

2.Explain the different types of string operators with examples.

Answer:
There are three main types of string operators:
1. Basic Operators
+ is used for concatenation.
"Hello" + "World"
Output: HelloWorld
* is used for repetition.
"Hi" * 3
Output: HiHiHi

2. Membership Operators

in and not in are used to check membership.

"Py" in "Python"

Output: True

3. Comparison Operators

==, !=, <, >, <=, and >= compare strings.

"abc" == "abc"

Output: True

3.Explain any five important string functions/methods with examples.

Answer:

1. **len()** — returns the length of a string.

len("Python")

Output: 6

2. **upper()** — converts to uppercase.

"hello".upper()

Output: HELLO

3. **lower()** — converts to lowercase.

"HELLO".lower()

Output: hello

4. **count()** — counts occurrences.

"banana".count("a")

Output: 3

5. **replace()** — replaces a substring.

"Hello Java".replace("Java", "Python")

Output: Hello Python