**1. What is Python?**

> Python is a high-level, interpreted, object oriented, dynamically typed, scripting language.

**2. Name some of the features of Python.**

> #1. Python is less complex.

#2. As it is a dynamically typed language it is memory efficient.

#3. As it supports oop’s we can bind the data and we can hide the data.

**3. What is the purpose of the PYTHONPATH environment variable?**

>

**4. Is python a case sensitive language?**

> Yes, Python is a case-sensitive language. This means that Python treats uppercase and lowercase letters as distinct characters.

In Python, the following are considered different:

- Variable names: `x` and `X` are treated as two different variables.

- Function names: `print()` and `Print()` are treated as two different functions.

- Keywords: `if` and `IF` are treated as two different keywords.

This means that you need to be careful when writing Python code to ensure that you are using the correct case for variables, functions, and keywords.

**5. What are the supported data types in Python?**

> Numbers, Boolean and Strings

**6. What is the output of print str if str = &#39;Hello World!&#39;?**

> Hello World!

**7. What is the output of print str[0] if str = &#39;Hello World!&#39;?**

> H

**8. What is the output of print str[2:5] if str = &#39;Hello World!&#39;?**

> llo

**9. What is the output of print str[2:] if str = &#39;Hello World!&#39;?**

> llo World!

**10. What is the output of print str \* 2 if str = &#39;Hello World!&#39;?**

> Hello World!Hello World!

**11. What is the output of print str + &quot;TEST&quot; if str = &#39;Hello World!&#39;?**

> Hello World!TEST

**12. What is the output of print list if list = [ &#39;abcd&#39;, 786 , 2.23, &#39;john&#39;, 70.2 ]?**

> ['abcd', 786, 2.23, 'john', 70.2]

**13. What is the output of print list[0] if list = [ &#39;abcd&#39;, 786 , 2.23, &#39;john&#39;, 70.2 ]?**

> abcd

**14. What is the output of print list[1:3] if list = [ &#39;abcd&#39;, 786 , 2.23, &#39;john&#39;, 70.2 ]?**

> [786, 2.23]

**15. What is the output of print list[2:] if list = [ &#39;abcd&#39;, 786 , 2.23, &#39;john&#39;, 70.2 ]?**

> [2.23, 'john', 70.2]

**16. What is the output of print tinylist \* 2 if tinylist = [123, &#39;john&#39;]?**

> [123, ‘john’, 123, ‘john’]

**17. What is the output of print list + tinylist \* 2 if list = [ &#39;abcd&#39;, 786 , 2.23, &#39;john&#39;, 70.2 ] and tinylist = [123, &#39;john&#39;]?**

> ['abcd', 786, 2.23, 'john', 70.2, 123, 'john', 123, 'john']

**18. What are tuples in Python?**

> Group of elements separated by camma (,) and enclosed in parentheses.

**19. What is the difference between tuples and lists in Python?**

> 1. **Tuples** are immutable we cannot add or remove the data.  **List**, on other hand, are immutable, their content can be modified.

2. **Tuple** uses parentheses ( ) to enclose their elements, while **List** use square brackets [ ],

3. **Tuples** are used for data that shouldn’t be changed, **Lists** are used to dynamic data that need to be modified.

**20. What is the output of print tuple if tuple = ( &#39;abcd&#39;, 786 , 2.23, &#39;john&#39;, 70.2 )?**

> ('abcd', 786, 2.23, 'john', 70.2)

**21. What is the output of print tuple[0] if tuple = ( &#39;abcd&#39;, 786 , 2.23, &#39;john&#39;, 70.2)?**

> abcd

**22. What is the output of print tuple[1:3] if tuple = ( &#39;abcd&#39;, 786 , 2.23, &#39;john&#39;, 70.2 )?**

> (786, 2.23)

**23. What is the output of print tuple[2:] if tuple = ( &#39;abcd&#39;, 786 , 2.23, &#39;john&#39;, 70.2)?**

> (2.23, 'john', 70.2)

**24. What is the output of print tinytuple \* 2 if tinytuple = (123, &#39;john&#39;)?**

> (123, 'john', 123, 'john')

**25. What is the output of print tuple + tinytuple if tuple = ( &#39;abcd&#39;, 786 , 2.23, &#39;john&#39;, 70.2 ) and tinytuple = (123, &#39;john&#39;)?**

> ('abcd', 786, 2.23, 'john', 70.2, 123, 'john')

**26. What are Python&#39;s dictionaries?**

> collection of data \ element which stores the item in the form of **key** and **value** which are separated by colon and separated by (,).

**27. How will you create a dictionary in python?**

> **SYNTAX**

var = {key:value, key:value }

**EXAMPLE**

d1 = {1:100, 2:200, 3:300}

**28. How will you get all the keys from the dictionary?**

> By using keys() method, we can get all the keys from dictionary.

**29. How will you get all the values from the dictionary?**

> By using values() method, we can get all the values from dictionary.

**30. How will you convert a string to an int in python?**

> str\_val = “123”

int\_val = int(str\_val)

print(int\_val) #o/p: 123

**31. How will you convert a string to a long in python?**

> str\_val = “12345678901234567890”

long\_val = int(str\_val)

# In python3, the long type has been removed, and int is used instead to represent both integers and long integer.

**32. How will you convert a string to a float in python?**

> str\_val = “1.23”

float\_val = float(str\_val)

print(float\_val) #o/p: 1.23

**33. How will you convert a object to a string in python?**

> The most common method to convert an object to a string is str() method. It works with such as integer,float and list

obj = 123

str1 = str(obj) #returns “123”

**34. How will you convert a object to a regular expression in python?**

>

**35. How will you convert a String to an object in python?**

>

**36. How will you convert a string to a tuple in python?**

> we can use tuple() function to convert a string to a tuple

str = “hello”

t1 = tuple(str)

print(t1)

**37. How will you convert a string to a list in python?**

> Splitting a string into a list

str = “hello world”

l1 = list(str.split())

print(l1) #o/p: ['hello', 'world']

**38. How will you convert a string to a set in python?**

> Splitting a string into a set

str = “hello world”

s1 = set(str.split())

print(s1) #o/p: {'hello', 'world'}

**39. How will you create a dictionary using tuples in python?**

> tup = (('a',1), ('b',2), ('c', 3))

d1 = dict(tup)

print(d1) #o/p: {'a': 1, 'b': 2, 'c': 3}

**40. How will you convert a string to a frozen set in python?**

> we can convert a string to a frozen set in Python using the following methods:

Using the `frozenset()` function

str = "hello"

frozen\_set = frozenset(str)

print(frozen\_set) # O/p: frozenset({'h', 'e', 'l', 'o'})

This method creates a frozen set with each character of the string as a separate element.

**41. How will you convert an integer to a character in python?**

> integer = 65

character = chr(integer)

print(character) #o/p: ‘A’

**42. How will you convert an integer to an unicode character in python?**

>

**43. How will you convert a single character to its integer value in python?**

> character = ‘A’

integer = ord(character)

print(integer) #o/p: 65

**44. How will you convert an integer to hexadecimal string in python?**

> we can use hex() function to convert an integer to hexadecimal.

m1 = 255

m2 = hex(m1)

print(m2)

**45. How will you convert an integer to octal string in python?**

> we can use oct() function to convert an integer to octal.

m1 = 10

m2 = oct(m1)

print(m2)

**46. What is the purpose of \*\* operator?**

> used to exponentiation (Power), which means raising a number to a power.

**47. What is the purpose of // operator?**

> it is used for integer division, also known as floor division, it always returns integer

**48. What is the purpose of is operator?**

> this operator is used to identify the two values are same or different, it will return boolean.

**49. What is the purpose of not in operator?**

> used to check the membership of an element in an iterable like list, tuple, set etc

**50. What is the purpose break statement in python?**

> it is a keyword which is used to forcefully stop the loop.

**51. What is the purpose continue statement in python?**

> used to skip or continue the statement.

**52. What is the purpose pass statement in python?**

> used to create empty block.

**53. How can you pick a random item from a list or tuple?**

> we can pick random item by using random module.

Import random

r1 = [1,2,3,4,5]

r2 = random.choice(r1)

print(r2)

**54. How can you pick a random item from a range?**

> we can pick random item from a range by using random module.

Import random

start = 1

end = 10

r1 = random.randint(start, end)

print(r1)

This will select a random integer between start and end

start = 1

end = 10

r1 = random.randrange(start, end+1)

print(r1)

This will select a random integer between start and end. That the end+1 is used to include the end value in the range.

**55. How can you get a random number in python?**

> we can pick random number by using random module.

r1 = random.randint(0, 100) # this generates a random number between 1 to 100.

print(r1)

**56. How will you set the starting value in generating random numbers?**

>

**57. How will you randomizes the items of a list in place?**

> we can randomize the item of a list in place using the shuffle() function from the random module

Import random

r1 = [1,2,3,4,5]

random.shuffle(r1)

print(r1)

**58. How will you capitalizes first letter of string?**

> You can capitalize the first letter of a string in Python using the capitalize() method or the title() method.

Here's an example using the capitalize() method:

string = "hello"

capitalized = string.capitalize()

print(capitalized) # O/p: "Hello"

Here's an example using the title() method:

string = "hello"

capitalized = string.title()

print(capitalized) # O/p: "Hello"

**59. How will you check in a string that all characters are alphanumeric?**

> we can use isalnum() method, this method returns True if all characters in the string are alphanumeric (i.e. either alphabets or number). It wont accept parameter(space).

str1 = “Naveen123”

print(str1)

col = str1.isalnum()

print(col) o/p: True

str1 = “Naveen 123”

print(str1)

col = str1.isalnum()

print(col) o/p: False

**60. How will you check in a string that all characters are digits?**

> we can use isdigit() method. This method returns True if all characters in the string are digits and there is at least one character, otherwise it returns False.

**61. How will you check in a string that all characters are in lowercase?**

> we can use islower() method. This method returns True if all characters in the string are lowercase.

**62. How will you check in a string that all characters are numerics?**

> we can use isnumeric() method. Return True if the string is a numeric string, False otherwise.

**63. How will you check in a string that all characters are whitespaces?**

> The isspace() method returns True if all the characters in a string are whitespaces, otherwise False.

**64. How will you check in a string that it is properly titlecased?**

> we can use istitle() method. Return True if the string is a title-cased string, False otherwise.

**65. How will you check in a string that all characters are in uppercase?**

> we can use isupper() method. Return True if the string is an uppercase string, False otherwise.

**66. How will you merge elements in a sequence?**

> There are several ways to merge elements in a sequence, depending on the type of sequence.

Few examples are:

1. Concatenating strings

a = “hello”

b = “naveen”

print(a + b)

1. Concatenating lists

a = [1,2,3]

b = [4,5,6]

print(a + b)

1. Using extend method. Extend list by appending elements from the iterable.

a = [1,2,3]

b = [4,5,6]

a.extend(b)

print(a)

**67. How will you get the length of the string?**

> we can use len() function. Return the number of items in a container.

a = “hello”

l = len(a)

print(l)

**68. How will you get a space-padded string with the original string left-justified to a total of**

width columns?

>

**69. How will you convert a string to all lowercase?**

> we can use lower() method to convert the strings into lower case.

**70. How will you remove all leading whitespace in string?**

> lstrip() method will remove all leading whitespace character.

s1 = “ hello naveen ”

s2 = s1.lstrip()

print(s2)

**71. How will you get the max alphabetical character from the string?**

> str = “hello”

print(max(str))

It compares with the ascii values…

**72. How will you get the min alphabetical character from the string?**

> str = “hello”

print(min(str))

It compares with the ascii values…

**73. How will you replaces all occurrences of old substring in string with new string?**

> replace() method, Return a copy with all occurrences of substring old replaced by new.

s1 = “Hello naveen, Hello again”

s2 = s1.replace(“Hello”, “Good bye”)

print(s2)

**74. How will you remove all leading and trailing whitespace in string?**

> strip() method will remove all leading and trailing whitespace character.

s1 = “ hello naveen ”

s2 = s1.strip()

print(s2)

**75. How will you change case for all letters in string?**

> Performing the . upper() method on a string converts all of the characters to uppercase, whereas the lower() method converts all of the characters to lowercase.

**76. How will you get titlecased version of string?**

> The title() method returns a string where the first character in every word is upper case.

**77. How will you convert a string to all uppercase?**

> we can use upperr() method to convert the lower case strings into uppercase.

**78. How will you check in a string that all characters are decimal?**

> we can use isdecimal() method, Return True if the string is a decimal string, False otherwise.

**79. What is the difference between del() and remove() methods of list?**

> del() statement is used to delete an element by its index, while

remove() is used to delete an element by its value.

list1 = ['abcd', 786, 2.23, 'john', 70.2]

del list1[1]

print(list1)

list1.remove(“john”)

print(list1)

**80. What is the output of len([1, 2, 3])?**

> 3

**81. What is the output of [1, 2, 3] + [4, 5, 6]?**

> [1, 2, 3, 4, 5, 6]

**82. What is the output of [&#39;Hi!&#39;] \* 4?**

> ['Hi', 'Hi', 'Hi', 'Hi']

**83. What is the output of 3 in [1, 2, 3]?**

> True

The “In” operator checks if a value is present in the list.

**84. What is the output of for x in [1, 2, 3]: print x?**

> 1

2

3

This is a simple for loop that iterate through the elements of the list and prints each element on a new line.

**85. What is the output of L[2] if L = [1,2,3]?**

> 3

**86. What is the output of L[-2] if L = [1,2,3]?**

> 2

**87. What is the output of L[1:] if L = [1,2,3]?**

> [2, 3]

**88. How will you compare two lists?**

> There are several ways to compare two lists in Python:

1. \*Equality\*: Check if two lists are identical (same elements in the same order)

list1 = [1, 2, 3]

list2 = [1, 2, 3]

print(list1 == list2) # O/p: True

2. \*Identity\*: Check if two lists are the same object (same memory location)

list1 = [1, 2, 3]

list2 = list1

print(list1 is list2) # O/p: True

3. \*Set comparison\*: Check if two lists have the same elements (ignoring order and duplicates)

list1 = [1, 2, 3]

list2 = [3, 2, 1]

print(set(list1) == set(list2)) # Output: True

4. \*Sorted comparison\*: Check if two lists have the same elements in the same order (after sorting)

list1 = [1, 2, 3]

list2 = [3, 2, 1]

print(sorted(list1) == sorted(list2)) # Output: True

**89. How will you get the length of a list?**

> by using len() function

l1 = [1,2,3]

n = len(l1)

print(n)

**90. How will you get the max valued item of a list?**

> we can use max() function to check max valued item of a list.

list1 = [1,2,3,4]

print(“max valued item is: ”, max(list1))

**91. How will you get the min valued item of a list?**

> we can use min() function to check min valued item of a list.

list1 = [1,2,3,4]

print(“min valued item is: ”, min(list1))

**92. How will you get the index of an object in a list?**

> we can use index() function to fetch the index of an item in the list.

n = [‘a’, ‘b’, ‘c’]

n.index(‘b’)

**93. How will you insert an object at given index in a list?**

> we can use insert() method to insert the item in the specified index

l1 = [1,2,3]

l1.insert(0,100) #here in (0,100), 0 is index and 100 is object / value to be added

**94. How will you remove last object from a list?**

> we can use pop() function to remove the last item and also gives the output of the item removed.

n = [‘a’, ‘b’, ‘c’,’d’,’e’]

print(n.pop()) # It removes last item in a list

print(n.pop(3)) # It removes particular value that we need to remove by giving index number.

**95. How will you remove an object from a list?**

> list1 = ['abcd', 786, 2.23, 'john', 70.2]

**we can remove by value**

list1.remove(“john”)

print(list1)

**OR**

**We can remove by index**

del list1[1]

print(list1)

**96. How will you reverse a list?**

> l1 = [1,2,3,4,5]

**Using reverse() function**

l1.reverse()

print(l1)

**Using slicing**

rl = l1[::-1]

print(rl)

**97. How will you sort a list?**

> l1 = [5,3,6,2,4,7,1]

Using sort() method

l1.sort()

print(l1)

Using sorted() function

sl = sorted(l1)

print(sl)