**Python Question and Answer Set-1**

Q1. Why do we call Python a general-purpose and high-level programming language?

Python is a general-purpose and high-level programming language because it is designed to be used in a range of applications and for its ease of readability.

Python is easy to understand and more natural for people to use. It is used in web development, data analysis, artificial intelligence, and scientific computing.

Q2. Why is Python called a dynamically typed language?

Python is called a dynamically typed language because there is no need to define/declare the type of variables.

For example- If I write x=5 in Python, the language automatically will understand x is an integer. I don’t need to specify if x is an integer or float or string or something else.

Q3. List some pros and cons of Python programming language.

Pros of Python Programming Language:

1. It is easy to use, learn and maintain.

2. It has a vast collection of libraries.

3. It increases productivity.

4. It is dynamically typed.

5. It is free and open source.

6. It is an interpreted language.

7. It is a portable programming language.

Cons of Python Programming Language:

1. It has poor memory efficiency as it consumes a lot of memory space.

2. It is weak in mobile computing.

3. It has speed limitations.

4. Underdeveloped database access.

5. It can have runtime errors.

Q4. In what all domains can we use Python?

Python can be used in the following domains-

1. Data Science

2. Web Development

3. Artificial Intelligence

4. Machine Learning

5. Automation

Q5. What are variables and how can we declare them?

Variable is the name given to a specific memory location to store values. They are like containers to store data values.

To declare a variable in Python -

* Name the variable
* Assign the required value to it.
* The data type of the variable will be automatically determined from the value assigned.

For example-

x=2

Python will take this x as an integer variable.

x=”2”

Python will take this x as a string variable.

Q6. How can we take input from the user in Python?

In Python, using the input() function, we take input from a user.

For example-

name = input("Priyanka Pal")

Print(name)

Q7. What is the default datatype of the value that has been taken as input using the input() function?

The default datatype of the value that has been taken as input using the input() function is a **string** datatype.

Q8. What is typecasting?

The conversion of one data type into another data type is called type casting.

It is also called type conversion.

For Example-

Converting integer to float-

int\_var = 30

casted\_int\_var = float(int\_var)

print("Int to float Typecasting = ", casted\_int\_var)

Output

Int to float Typecasting =  30.0

Q9. Can we take more than one input from the user using single input() function? If yes, how? If not, why?

Yes, we can take more than one input from the user using single input() function by using the **split** function.

Q10. What are keywords?

Keywords are some predefined and reserved words in python that have special meanings. They are used to define the syntax and structure of the Python language.

Examples of keywords- true, false, break, for, etc.

Q11. Can we use keywords as a variable? Support your answer with a reason.

We cannot use keywords as a variable as keywords have predefined meanings.

If we use keywords as variables the compiler will get confused about whether to treat them as a keyword or a variable.

Q12. What is indentation? What's the use of indentation in Python?

Indentation refers to the spaces at the beginning of a code line.

Indentation in Python is used to add white space before a statement to a particular block of code.

Q13. How can we throw some output in Python?

We can throw some output in Python using the Print function.

Q14. What are operators in Python?

Operators in Python are special symbols that carry arithmetic or logical operations. Example of operators- +, -, %, /, =, >, etc.

Q15. What is the difference between / and // operators?

|  |  |
| --- | --- |
| / Operator | // Operator |
| **/ Operator or Division operator** used to divide two operands.  Example-  a = 5  b = 2  print("Divide a/b = ", a/b)  Output  Divide a/b =  2.5 | **// operator or Floor division operator** is used to calculate floor division.  It removes the fractional part from the normal division.  Example-  a = 5  b = 2  print("Divide a//b = ", a//b)  Output-  Divide a//b =  2 |

Q16. Write a code that gives the following as an output.

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iNeuroniNeuroniNeuroniNeuron

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text = "iNeuron"

print(text \* 4)

Q17. Write a code to take a number as input from the user and check if the number is odd or even.

num = int(input("Enter a number: "))

if (num % 2) == 0:

   print(num, "is an even number")

else:

   print(num, "is an odd number")

Output-

Enter a number: 888

888 is an even number

Q18. What is a Boolean operator?

Boolean Operators are those that result in the Boolean values of True and False. These include and, or and not.

Q19. What will the output of the following be?

Answer

As we know-

1 => True

0 => False

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1 or 0 => 1

0 and 0 => 0

True and False and True => False

1 or 0 or 0 => 1

```

Q20. What are conditional statements in Python?

Conditional statements in Python are used to execute a block of code when the given condition is true or false. It is also called as decision-making statement.

In Python conditional statements are-

1. if statement

2. if-else statement

3. elif statement

Q21. What is the use of 'if', 'elif' and 'else' keywords?

**Use of ‘if’ keyword**- It helps to run a particular code only when a certain condition is satisfied.

For example-

x = 30

if x <= 50:

print(“MCU is better than DC”)

Output-

MCU is better than DC

**Use of ‘elif’ keyword**- It is used to include multiple conditional expressions after the if condition or between the if and else conditions.

For example-

super\_hero\_rating = 8.4

if super\_hero\_rating > 9 :

print("DC is better than MCU")

elif super\_hero\_rating == 9 :

print("DC and MCU are Bhai Bhai")

else:

print("MCU is better than DC")

Output-

MCU is better than DC

**Use of ‘else’ keyword**- It is used in conditional statements (if statements), and decides what to do if the condition is False.

For example-

Ironman\_Love = 3000

if Ironman\_Love > 2000:

print("We Love Iron Man")

else:

print("We can't hate Iron Man")

Output-

We Love Iron Man

Q22. Write a code to take the age of a person as input and if age >= 18 display "I can vote". If the age is < 18 display "I can't vote".

age = int(input("Enter a number: "))

if age >= 18:

print("I can vote")

else:

print("I can't vote")

Output-

Enter a number: 30

I can vote

Q23. Write a code that displays the sum of all the even numbers from the given list.

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numbers = [12, 75, 150, 180, 145, 525, 50]

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Answer-

list1 = [12, 75, 150, 180, 145, 525, 50]

even = []

odd = []

for number in list1:

if number % 2==0:

even.append(number)

print("even list =", even)

print("sum of evens =", sum(even))

**Output-**

even list = [12, 150, 180, 50]

sum of evens = 392

Q24. Write a code to take 3 numbers as input from the user and display the greatest no as output.

a = int(input("Enter the first number: "))

b = int(input("Enter the second number: "))

c = int(input("Enter the third number: "))

if a > b and a > c:

    largest = a

if b > a and b > c:

    largest = b

else:

    largest = c

print("The largest number is", largest)

**Output-**

Enter the first number: 10

Enter the second number: 20

Enter the third number: 6

The largest number is 20

Q25. Write a program to display only those numbers from a list that satisfy the following conditions

- The number must be divisible by five

- If the number is greater than 150, then skip it and move to the next number

- If the number is greater than 500, then stop the loop

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numbers = [12, 75, 150, 180, 145, 525, 50]

```

Answer

numbers = [12, 75, 150, 180, 145, 525, 50]

for item in numbers:

    if item > 500:

        break

    elif item > 150:

        continue

    elif item % 5 == 0:

        print(item)

**Output-**

75

150

145

Q26. What is a string? How can we declare string in Python?

Answer

In python, a string is **a sequence of characters**.

We can declare string using ‘’ or “”.

Q27. How can we access the string using its index?

Q28. Write a code to get the desired output of the following

string = "Big Data iNeuron"

desired\_output = "iNeuron"

Q29. Write a code to get the desired output of the following

string = "Big Data iNeuron"

desired\_output = "norueNi"

Q30. Resverse the string given in the above question.

Q31. How can you delete entire string at once?

Q32. What is escape sequence?

Q33. How can you print the below string?

'iNeuron's Big Data Course'

Q34. What is a list in Python?

Q35. How can you create a list in Python?

Q36. How can we access the elements in a list?

Q37. Write a code to access the word "iNeuron" from the given list.

lst = [1,2,3,"Hi",[45,54, "iNeuron"], "Big Data"]

Q38. Take a list as an input from the user and find the length of the list.

Q39. Add the word "Big" in the 3rd index of the given list.

lst = ["Welcome", "to", "Data", "course"]

Q40. What is a tuple? How is it different from list?

Q41. How can you create a tuple in Python?

Q42. Create a tuple and try to add your name in the tuple. Are you able to do it? Support your answer with reason.

Q43. Can two tuple be appended. If yes, write a code for it. If not, why?

Q44. Take a tuple as an input and print the count of elements in it.

Q45. What are sets in Python?

Q46. How can you create a set?

Q47. Create a set and add "iNeuron" in your set.

Q48. Try to add multiple values using add() function.

Q49. How is update() different from add()?

Q50. What is clear() in sets?

Q51. What is frozen set?

Q52. How is frozen set different from set?

Q53. What is union() in sets? Explain via code.

Q54. What is intersection() in sets? Explain via code.

Q55. What is dictionary ibn Python?

Q56. How is dictionary different from all other data structures.

Q57. How can we delare a dictionary in Python?

Q58. What will the output of the following?

var = {}

print(type(var))

Q59. How can we add an element in a dictionary?

Q60. Create a dictionary and access all the values in that dictionary.

Q61. Create a nested dictionary and access all the element in the inner dictionary.

Q62. What is the use of get() function?

Q63. What is the use of items() function?

Q64. What is the use of pop() function?

Q65. What is the use of popitems() function?

Q66. What is the use of keys() function?

Q67. What is the use of values() function?

Q68. What are loops in Python?

Q69. How many type of loop are there in Python?

Q70. What is the difference between for and while loops?

Q71. What is the use of continue statement?

Q72. What is the use of break statement?

Q73. What is the use of pass statement?

Q74. What is the use of range() function?

Q75. How can you loop over a dictionary?

**Coding problems**

Q76. Write a Python program to find the factorial of a given number.

Q77. Write a Python program to calculate the simple interest. Formula to calculate simple interest is SI = (P*R*T)/100

Q78. Write a Python program to calculate the compound interest. Formula of compound interest is A = P(1+ R/100)^t.

Q79. Write a Python program to check if a number is prime or not.

Q80. Write a Python program to check Armstrong Number.

Q81. Write a Python program to find the n-th Fibonacci Number.

Q82. Write a Python program to interchange the first and last element in a list.

Q83. Write a Python program to swap two elements in a list.

Q84. Write a Python program to find N largest element from a list.

Q85. Write a Python program to find cumulative sum of a list.

Q86. Write a Python program to check if a string is palindrome or not.

Q87. Write a Python program to remove i'th element from a string.

Q88. Write a Python program to check if a substring is present in a given string.

Q89. Write a Python program to find words which are greater than given length k.

Q90. Write a Python program to extract unquire dictionary values.

Q91. Write a Python program to merge two dictionary.

Q92. Write a Python program to convert a list of tuples into dictionary.

Input : [('Sachin', 10), ('MSD', 7), ('Kohli', 18), ('Rohit', 45)]

Output : {'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}

Q93. Write a Python program to create a list of tuples from given list having number and its cube in each tuple.

Input: list = [9, 5, 6]

Output: [(9, 729), (5, 125), (6, 216)]

Q94. Write a Python program to get all combinations of 2 tuples.

Input : test\_tuple1 = (7, 2), test\_tuple2 = (7, 8)

Output : [(7, 7), (7, 8), (2, 7), (2, 8), (7, 7), (7, 2), (8, 7), (8, 2)]

Q95. Write a Python program to sort a list of tuples by second item.

Input : [('for', 24), ('Geeks', 8), ('Geeks', 30)]

Output : [('Geeks', 8), ('for', 24), ('Geeks', 30)]

Q96. Write a python program to print below pattern.

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Q97. Write a python program to print below pattern.

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Q98. Write a python program to print below pattern.

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Q99. Write a python program to print below pattern.

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

Q100. Write a python program to print below pattern.

A

B B

C C C

D D D D

E E E E E