**Assignment Part-1**

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

**A)** Python is general- purpose language , it can be used to create a variety of different programs and is’nt specialized for any specific problems. This versatility, along with its beginner friendliness has made it one of the most- used programming language

**Q2. Why is Python called a dynamically typed language?**

**A)**  python don’t have any problem even if we don’t declare the type of variable. It states the kind of variable in the runtime of the program. Python also takes care of the memory management which is crucial in programming. So python is dynamically typed language

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

**A)**

|  |  |
| --- | --- |
| **Pros** | **cons** |
| Improved productivity | Slow speed |
| Interpreted language | Not memory efficient |
| Dynamically typed | Weak in mobile computing |
| Free and open source | Database access |
| Vast Libraries support | Runtime errors |

**Q4. In what all domains can we use Python?**

**A)**  We can use python in multiple domains like Machine learning, Data science, web development, Data analysis, Scripting, AI system apps, Software development.

**Q5. What are variable and how can we declare them?**

**A)** Variable is a name given to a memory location. We can't use any symbols and numbers as a variable. We can only use underscore "\_" in variable name.

**ex:** abc\_123, \_123

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

**A)** We can take input From user in python by using input() function

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

**A)** The input function returns an empty string if the user didn’t enter the value. Empty strings are falsie, so if the user presses enter without typing any value , the default value is returned. the input() function

The input() function takes an optional prompt argument and write it to standard output trailing new line.

**Q8. What is type casting?**

**A)** The conversation of one datatype into other datatype is known as typecasting or type conversation in python. It supports a wide variety of functions like int(), float(), str() etc.

**Ex:**

a = 5

b = 6.4

casted\_a = float(a)

**Q9. Can we take more than one input from the user using single input() function? If yes, how? If no, why?**

**A)** we can’t take more than one input from the user using single input() function. Because when we give input() function for one time it will only allocate one memory location for that particular variable.so that we can only give one input for one input function.

**Q10. What are keywords?**

**A)** Every Scripting language has designated words or keywords with particular definition. The fundamental constituent elements of any python program are python keywords. We can’t use those for any purpose , no need to import any keywords into our program because they are permanently present. Python contains 35 keywords.

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

**A) )** we can’t use keywords as variables, functions or any other identifier. They are used to define syntax and structure of python language. If we use keywords as variable names then we will get a syntax error.

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

**A)** Indentation in python refers to the white space at the start of the line. We can create indentation using space or tabs. When writing python code, we have to define a group of statements for functions and loops. This is done by properly indenting the statements for that block. The white spaces at the start of the line are used to determine the indentation level of the line. We have to increase the indent level to the group of statements for that block. Similarly we, reduce the indentation to close the grouping.

**Advantages of Python:**

* In most programming languages, indentation is used to properly structure code. In python it’s used for grouping , making the code automatically beautiful.
* Python indentation rules are easy. Most of the Python IDEs automatically indent the code for you , so it’s very easy to write the properly indented code.

**Q13. How can we throw some output in Python?**

**A)** We can throw some output in python by using print statement. To end the printed line with a newline, add a print statement without any objects.

**Q14. What are operators in Python?**

**A)** Python operator is a symbol that performs an operation on one or more operands. An operand is a variable or value in which we perform the operation.

**There are 7 categories:**

* Arithmetic Operator
* Relational Operator
* Assignment Operator
* Logical Operator
* Membership Operator
* Identity Operator
* Python Operator

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

**A) )** In Python we can perform division in two ways. The first one is float division**(“/”)** and the second one is integer division**(“//”)**\_or floor division

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

**iNeuroniNeuroniNeuroniNeurom**

**A)** a = "iNeuron"

a = a\*4

print(a)

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

**A)** number = int(input("Enter the number"))

print("number =" , number)

if number%2==0:

 print("even")

else:

 print("odd")

**Q18. What are boolean operator?**

**A) )**Boolean operators are simple words(AN ,OR ,NOT ,or AND NOT) used as conjunctions to combine or exclude keywords in a search, Resulting in more focused and productive results. This should save time and effort by eliminating inappropriate hits that must be scanned before discarding.

**Q19. What will the output of the following?**

**1 or 0**

**A)1**

**0 and 0**

**A) 0**

**True and False and True**

**A)False**

**1 or 0 or 0**

**A) 1**

**Q20. What are conditional statements in Python?**

**A)** Python has some pre defined conditional statements. A conditional statement itself, is used to handle conditions in your program while making decisions based on the conditions encountered by the program.

Python has 3 conditional statements:

* If statement
* If-else statement
* If-elif-else ladder

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

**A)** If statement is used to determine whether a block of code will be executed or not. If the program finds the condition defined in the if statement to be true, it will go ahead and execute the code block inside the if statement.

The elif statement is used to check for multiple conditions and execute the code block within if any of the condition evaluate to be true. the elif statement is similar to else statement in the context that is optional but unlike the else statement , there can be multiple elif statements in a code block following an if statement.

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

**A)** age = int(input("enter the age of a person"))

print("age of a person =" , age)

if age>=18:

    print("i can vote")

else:

    print("i can't vote")

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

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

**A)** lst = [12,75,150,180,145,525,50]

even\_sum = 0

for val in lst:

    if val%2==0:

        print(val)

        even\_sum = even\_sum+val

    print(even\_sum)

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

**A)** num1 = int(input("enter first number:"))

num2 = int(input("enter second number:"))

num3 = int(input("enter third number:"))

if (num1>num2) and (num1>num3):

    largest = num1

elif(num2>num1) and (num2>num3):

 largest = num2

else:

 largest = num3

print("the largest num:" , largest)

**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**

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

**A) ```**

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

for i in numbers:

    if i>500:

        break

    elif i>150:

        continue

    elif i%5==0:

        print(i)

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

**A)**  string in python are arrays of bytes representing Unicode characters. However , python does not have a character data type a single character is simply a string with length of 1. Square brackets can be used to access elements of the string. We can declare string by using single quptes or double quotes

Ex: “madhu”

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

**A)**

**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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**\* \* \***

**\* \* \* \***

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**Q97. Write a python program to print below pattern.**

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**\*\***

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**\*\*\*\***

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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**