

Q.19 Discuss the role of utility software in the context of computer performance?

Ans: Utilities are those application programs that assist the computer by performing housekeeping functions like backing up disk or scanning/cleaning viruses or arranging information etc. its example is Antivirus software.

Q.20 What is the importance of an OS?

Ans: An operating system is a program which acts as an interface between a user and the hardware. It manages all the resources of the computer system. It provides an environment to the user to work with. All the application are installed after the operating system is installed. It manages memory, processing, storage, memory etc.

Q.22 What is the utility of these software?

(a) disk fragmentor

(b) backup software

Ans: (a) disk fragmentor: A file is fragmented when it becomes too large for your computer to store in a single location on a disk. When this happens, your computer splits the file up and stores in pieces. You can use fragmented files, but it takes your computer longer to access them.

(b) Backup software: This utility program facilitates the backing-up of disk. Back-up means duplicating the disk information so that in case of any damage or data-loss, this backed-up data may be used.

Chapter – 3: GETTING STARTED WITH PYTHON

Very Short answer Type Questions

Q.1 When was Python released?

Ans- Python was released in February 1991.

Q.2 Who developed Python?

Ans- Python was developed by Guido Van Rossum.

Q.3 Which two languages contributed to Python as a Programming Language?

Ans- ABC language and Modula 3.

Q.4 Is Python an Object Oriented Language?

Ans- Yes, Python is an object oriented language.

Q.5 Python got its name from which show?

Ans- Python got its name from famous BBC comedy show “Monty Python’s Flying Circus”.

Short Answer Type Questions

Q.1 „Python is an interpreted language“. What does it mean to you?

Ans- It means that the Python installation interprets and executes the code line by line at a time.

Q.2 What does a cross platform language mean?

Ans- it means a language can run equally on variety of platforms-Windows, Linux/UNIX, Macintosh, Supercomputers, Smart phones etc.

Q.3 Python is a Free and Open Source language. What do you understand by this feature?

Ans- It means Python is freely available without any cost. Its source code is also available. One can modify, improve/extend an open source software.

Q.4 In how many ways, can you work in Python?

Ans-In two ways we can work in Python-

(i) Interactive mode (ii)Script Mode

Q.5 What is the difference between Interactive mode and Script Mode in Python?

Ans- In interactive mode, one command can run at a time and commands are not saved. Whereas in Script mode, we can save all the commands in the form of a program file and can see output of all lines together.

Q.6 What are the advantages of Python?

Ans- Advantages-

- i. Easy to use OOPS Language.
- ii. Expressive Language.
- iii. Interpreted Language.
- iv. It is complete.
- v. Cross-Platform Language.
- vi. Free and Open Source.
- vii. Variety of Usage/ Applications

Q.7 What are the limitations of Python?

Ans- limitations-

- i. Not the fastest language.
- ii. Lesser Libraries than C, Java, Perl.
- iii. Not strong on Type Binding.
- iv. Not easily convertible.

Q.8 Which of the following are not valid strings in Python?

(a)“Hello” (b) “Hello” (c) ‘Hello’ (d) „Hello” (e) {Hello}

Ans- String (c) , (d) and (e) are not valid strings.

Very Short answer Type Questions

Q.1 What is None literal in Python?

Ans: Python has one special literal, which is **None**. The None literal is used to indicate absence of value. It is also used to indicate the end of lists in Python. It means "There is nothing here".

Q.2 What is the error in following code: `x, y = 7` ?

Ans: The following error comes - 'int' object is not iterable. Which means an integer object i.e. cannot be repeated for x and y. one more integer object is required after 7.

Q.3 what will the following code do: `a=b=18` ?

Ans: This code will assign 18 to a and b both.

Q.4 Following code is creating problem `X = 0281`, find reason.

Ans: 0281 is an invalid token.

Q.6 Find the error in the following code:

(a) `y = x + 5` (b) `a=input("Value: ")` (c) `print(x = y = 5)`
`print(x,y)` `b = a/2` `print(a, b)`

Ans: (a) Name 'x' is not defined.

(b) Unsupported operand type(s) for /: 'str' and 'int'.

(c) Invalid Syntax.

Short Answer Type Questions

Q.1 What is the difference between a keyword and an identifier?

Ans: Difference between Keyword and Identifier: Every language has keywords and identifiers, which are only understood by its compiler. Keywords are predefined reserved words, which possess special meaning. An identifier is a unique name given to a particular variable, function or label of class in the program.

Variables are identifiers.

This are key words list.

<u>and</u>	A logical operator
<u>as</u>	To create an alias
<u>assert</u>	For debugging
<u>break</u>	To break out of a loop
<u>class</u>	To define a class
<u>continue</u>	To continue to the next iteration of a loop
<u>def</u>	To define a function
<u>del</u>	To delete an object
<u>elif</u>	Used in conditional statements, same as else if
<u>else</u>	Used in conditional statements
<u>except</u>	Used with exceptions, what to do when an exception occurs
<u>False</u>	Boolean value, result of comparison operations
<u>finally</u>	Used with exceptions, a block of code that will be executed no matter if there is an exception or not
<u>for</u>	To create a for loop
<u>from</u>	To import specific parts of a module
<u>global</u>	To declare a global variable
<u>if</u>	To make a conditional statement

<u>import</u>	To import a module
<u>in</u>	To check if a value is present in a list, tuple, etc.
<u>is</u>	To test if two variables are equal
<u>lambda</u>	To create an anonymous function
<u>None</u>	Represents a null value
<u>nonlocal</u>	To declare a non-local variable
<u>not</u>	A logical operator
<u>or</u>	A logical operator
<u>pass</u>	A null statement, a statement that will do nothing
<u>raise</u>	To raise an exception
<u>return</u>	To exit a function and return a value
<u>True</u>	Boolean value, result of comparison operations
<u>try</u>	To make a try...except statement
<u>while</u>	To create a while loop

Q.2 What are literals in Python? How many types of Literals allowed in Python?

Ans: Literals: Python comes with some built-in objects. Some are used so often that Python has a quick way to make these objects, called literals.

The literals include the string, Unicode string, integer, float, long, list, tuple and dictionary types.

Q.3 How many types of sequences are supported in Python?

Ans: Three Types of Sequences are supported in python:

- (i) String
- (ii) List
- (iii) Tuple

Q.4 What factors guide the choice of identifiers in program?

Ans: (i) An identifier must start with a letter or underscore followed by any number of digits and/or letters.

(ii) No reserved word or standard identifier should be used.

(iii) No special character (Other than underscore) should be included in the identifier.

Q.5 What is the difference between an expression and a statement in Python?

Ans: A statement is an instruction that the Python interpreter can execute. We have only seen the assignment statement so far. Some other kinds of statements that we'll see shortly are while statements, for statements, if statements, and import statements. (There are other kinds too!)

An expression is a combination of values, variables, operators, and calls to functions. Expressions need to be evaluated. If you ask Python to print an expression, the interpreter evaluates the expression and displays the result.

Q.6 What are operators? What is their function? Give examples of some unary and binary operators.

Ans: "Operators are those symbols used with operands, which tells compiler which operation is to be done on operands." in other words – "operators are tokens that trigger some computation/action when applied to variables and other objects in an expression."

Operators are of following types:

- **Unary operators** like (+) Unary Plus, (-) Unary Minus, not etc.
- **Binary Operators** like (+) addition, (*) multiplication, and etc.
-

Q.7 What is block/code block/suit in Python?

Ans: Sometimes a group of statements is part of another statement of function. Such a group of one or more statements is called **block** or **code-block** or **suit** in python. e.g.

```
if a>b:
    print("A is graeter")
    print("Value of A is : ",a)
else:
    print("B is graeter")
    print("Value of A is : ",b)
```

Here both the sections are separate code-blocks

Q.8 What is the role of indentation in Python?

Ans: Indentation plays a very important role in Python. Python uses indentation to create blocks of code. Statements at same indentation level are part of same block/suit. You cannot unnecessarily indent a statement; python will raise an error for that.

Q.9 How many types of strings are supported by Python?

Ans: Python supports two types of strings:

- Single-line string That terminates in single line.
- Multi-line String That stores multiple lines of text.

Q.10 What do you mean by type conversion?

Ans. Type conversion in Python is the process of changing the data type of a value from one type to another. It's a fundamental concept in Python that's essential for working with different types of data in programs.

Q.11 What are variables in python?

Ans. In Python, variables are containers that store data values and act as placeholders for information that Python can recall later during the coding process. Variables are created when a value is assigned to them, and they can be assigned values of different types

Skill Based Questions

Q 1. How can you create multi-line strings in Python?

Ans: We can create multi-line string by putting a backslash (\) at the end of line which allows you to continue typing in next line in same string.

Q 2. Which of the following are syntactically correct strings? State reason.

- "Python is nice Language"
- „He called me "Friend!" when he came"
- "Very Good"
- „This is a good book"
- "Namaste
- "I liked „Harry Potter" very much"

Ans: (a) Correct (b) Correct (c) Incorrect (d) Correct (e) Incorrect (f) Correct

Q.3 What do you mean by constant? Explain with one example.

Ans. A constant is a value or number that remains fixed and does not change in an expression. Here are some examples of constants:

- In the expression $5x + 10$, the constant term is 10.
- In $2a$, 2 is a constant.

Q.3 What is the error in following Python program with one statement?

```
print("My name is : ", name)
```

suggest a solution

Ans: Error is : "name 'name' is not defined". And the solution is to declare the variable-name before

Q. 4 What will be the output of the following code:

```
name='Hari'
age=18
print(name, ", you are ", age, " now but ", end="")
print("You will be ", age+1, " next Year")
```

Ans: Output: Hari , you are 18 now but You will be 19 next year

Q.5 WAP to calculate simple interest.

```
Ans: p=int(input("Enter Principal : "))
r=int(input("Enter Rates : "))
t=int(input("Enter Time :"))
si=(p*r*t)/100
print("Simple Interest is :",si)
```

Chapter – 4: DATA HANDLING

Very Short answer Type Questions

- Computational thinking means:
 - Thinking randomly
 - thinking like a superman
 - problem solving technique
 - none of these

ans. c) problem solving technique
- Who developed the Python programming language?
 - Charles Babbage
 - Guido van Rossum
 - James Gosling
 - None of these

ans. b) Guido van Rossum
- Which is the default Python command prompt?
 - <<<
 - <<
 - >>>>
 - >>>

ans. d) >>>
- Which of the following is a valid arithmetic operator in Python?
 - //
 - ?
 - <
 - None of these

ans. a) //
- What will be the output of $100/10$?
 - 10
 - 10.0
 - 10.00
 - None of these

ans. b) 10.0
- Which of the following is a relational operator in Python?
 - =
 - //
 - ==
 - None of these

ans. d) None of these
- Which of the following is a valid variable name?
 - f%2
 - 20ans
 - ans
 - \$ans

ans. c) ans
- What will be the output of the following code?
 $A=2+2/2$
 - 2
 - 3
 - 4
 - 1

ans. b) 3
- Which is multiline comment in python programming language.

- a) / b) # c) `''''''` d) //

ans. c) `''''''`

10. The _____ operator is used to find remainder when a number is divided by other.

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

ans. c) %

11. if((a<=b and a<=C)): than

- a) a is the greatest number b) a is the smallest number
c) b is the greatest number d) c is the greatest number

ans. a is the smallest number

12. The _____ data type allows only True/False values.

- a) bool b) boolean c) relation d) None of these

ans. b) boolean

13. Which is single line comment in python programming language?

- a) / b) # c) `''''''` d) //

ans. b) #

14. Which is assignment operator in python programming language?

- a) = b) # c) `''''''` d) //

ans. a) =

15. Which is increment operator in python programming language?

- a) / b) # c) ++ d) //

ans. c) ++

16. Which is logical operator in python programming language?

- a) / b) # c) and d) //

ans. c) and

17. Which is relational operator in python programming language?

- a) <= b) # c) `''''''` d) //

ans. a) <=

18. ----- is collect data from interactively for python?

- a) print b) msg c) input d) None of these

ans. c) input

19 Identify the data types of the following values given bellow –

3, 3j, 13.0, "12", "14", 2+0j, 19, [1,2,3], (3,4,5)

Ans: 3 – int 3j – complex 13.0 – float "12" – string "14" – string
2+0j – complex 19 – int [1,2,3] – list (3,4,5) – tuple

Q.20 What will be the output of the following

(a)12/4 (b)14//14 (c)14%4 (d) 14.0/4 (e) 14.0//4 (f)14.0%4

Ans: (a) 3.0 (b) 1 (c) 2 (d) 3.5 (e) 3.0 (f) 2.0

Q.21 What will be the output of the following ?

(a) bool(0) (b) bool(„0“) **(c) bool(int(„0“))**

(d) bool(str(0.0)) (e) bool(0j) **(f) bool(0.0)**

Ans: (a) False (b) True (c) False

(d) True (e) False (f) False

Q.22 What will be the output of the following ?

(a)87//5 (b)(87//5.0) == (87//5) (c) 87//5.0 (d) 17%5.0

Ans: (a) 17 (b) True (c) 17.0 (d) 2.0

Short Answer Type Questions

Q.1 What are data types? What are Python's built-in core data types?

Ans: Every value in Python has a datatype. Since everything is an object in Python programming, data

types are actually classes and variables are instance (object) of these classes.

There are various data types in Python. Some of the important types are listed below.

(i) Numbers (ii) String (iii) List (iv) Tuple (v) Dictionary

Q.2 Which data types of Python handle Numbers?

Ans: It is cleared by name that Number data types are used to store numeric value in Python. The Numbers in Python have following core data types:

- (i) Integers
 - a. Integers (signed)
 - b. Booleans
- (ii) Floating-Point Numbers
- (iii) Complex Numbers

Q.3 Why is Boolean considered a subtype of Integers?

Ans: Because Boolean Values *False* and *True* behave like the values 0 and 1, respectively. So Boolean type is a subtype of plain integers.

Q.4 What do you understand by term „immutable“?

Ans: Immutable types are those data types that can never change their value in place. In Python the following types are immutable:

- (i) integers
- (ii) floating-point numbers
- (iii) Booleans
- (iv) Strings
- (v) Tuples

Q.5 What are mutable and immutable types in Python? List both of them.

Ans: Mutable types means those data types whose values can be changed at the time of execution.

They are as follows:

- Lists
- Dictionaries
- Sets

Immutable types are those data types that can never change their value in place. In Python the following types are immutable:

- integers
- floating-point numbers
- Booleans
- Strings
- Tuples

Q.6 What are augmented assignment operators? How are they useful?

Ans: An augmented assignment is generally used to replace a statement where an operator takes a variable as one of its arguments and then assigns the result back to the same variable. A simple example is `x += 1` which is expanded to `x = x + (1)`. Similar constructions are often available for various binary operators. They are helpful in making the source code small.

Skill Based Questions

Q.1 Write a program to calculate compound simple interest after taking the principle, rate and time.

```
Ans: #Compound Interest
p=int(input("Enter the Principal"))
r=int(input("Enter the Interest Rate"))
t=int(input("Enter the Tenure"))
temp=1+r/100
f=1
for i in range(1,t+1):
    f=f*temp
Amount=p*f
interest=Amount-p
print("The interest on ",p," with rate ",r," is ",interest)
```

Q.2 WAP to take the temperatures of all 7 days of the week and displays the average temperature of that week.

```
Ans: d1=int(input("Temperature of day 1 : "))
d2=int(input("Temperature of day 2 : "))
d3=int(input("Temperature of day 3 : "))
d4=int(input("Temperature of day 4 : "))
d5=int(input("Temperature of day 5 : "))
d6=int(input("Temperature of day 6 : "))
d7=int(input("Temperature of day 7 : "))
avg=(d1+d2+d3+d4+d5+d6+d7)/7
print("The average temp is : ",avg)
```

Chapter – 5: CONDITIONAL AND ITERATIVE STATEMENTS

Short Answer Type Questions

Q.1 What a range() function does? Give an example.

Ans: The range() function returns a sequence of numbers, starting from 0 by default, and increments by 1 (by default), and ends at a specified number. its syntax is **range(start, stop, step)** e.g.

```
x = range(3, 6)
```

```
x = range(1, 10,2)
```

```
for n in x:
```

```
for n in x:
```

```
print(n)
```

```
print(n)
```

```
#This code will print 3 4 5
```

```
#This code will print 1 3 5 7 9
```

Q.2 What are loops in Python? How many types of loop are there in Python?

Ans: Loops are iteration constructs in Python. Iteration means repetition of a set of statements depending upon a condition test. Loops has three basic elements within it to repeat the statements –

- Initialization (Start)
- Check Condition (Stop)
- Updation (Step)

Python provide two types of loop

- (i) Conditional Loop **while**(Condition based loop)
- (ii) Counting loop **for** (loop for a given number of times).

Q.3 What is the syntax of if-elif statement in Python?

Ans: The syntax of if-elif statement in python is as follows:

```
If condition1:
```

```

#code-block of statements when condition1 is true
elif condition2:
    #code-block of statements when condition2 is true
elif condition3:
    #code-block of statements when condition3 is true
.
.
.
else:
    #code-block of statements when all above conditions are false.

```

Q.4 What are jump statements in Python? Name jump statements with example.

Ans: Python offers two jump statements to be used with in loops to jump out of loop-iterations. These are **break** and **continue** statements.

```

#program to stop loop when 5 encounters
n=int(input("Enter limit : " ))
i=0
while i<=n:
    i+=1
    if i==5:
        break
    print(i)

```

```

#program to print upto n excluding 5
n=int(input("Enter limit : " ))
i=0
while i<=n:
    i+=1
    if i==5:
        continue
    print(i)

```

Q.5 Rewrite the following code fragment using for loop.

```

i=100
while(i>0):
    print(i)
    i-=3

```

Ans:

```

for i in range(100,0,-3):
    print(i)

```

Q.6 What is the error in following code. Rewrite the correct code.

```

weather='raining'
if weather='sunny':
    print('wear sunblock')
elif weather='snow':
    print('Going skiing')
else:
    print("None of the above")

```

Correct Code:

```

weather='raining'
if weather=='sunny':
    print('wear sunblock')
elif weather=='snow':
    print('Going skiing')
else:
    print("None of the above")

```

Skill Based Questions

Q.1 WAP to compute the result when two numbers and one operator is given by user.

Ans:

```
a=int(input("Enter 1st number: "))
b=int(input("Enter 2nd number: "))
c=input("Enter the Operation +,-,/,*:")
print("The result is : ", end='')
if c=='+':
    print(a+b)
elif c=='-':
    print(a-b)
elif c=='/':
    print(a/b)
elif c=='*':
    print(a*b)
else:
    print("Eoor : Wrog operator entered")
```

Q.2 WAP to input a digit and print it in words.

Ans:

```
n=int(input("Enter the Digit from 0 to 9: "))
print("Entered Digit is : ",end='')
if n==0:
    print("Zero")
elif n==1:
    print("One")
elif n==2:
    print("Two")
elif n==3:
    print("Three")
elif n==4:
    print("Four")
elif n==5:
    print("Five")
elif n==6:
    print("Six")
elif n==7:
    print("Seven")
elif n==8:
    print("Eight")
elif n==9:
    print("Nine")
else:
    print("Not a digit")
```

Q.3 WAP to check whether square root of a given number is prime or not.

Ans:

```
import math
n=int(input("Enter a number"))
m=int(math.sqrt(n))
k=0
for i in range(2,m//2+1):
    if(m%i==0):
        k=k+1
if(k==0):
    print(m, ", which is sqare root of ",n, ", is Prime number.")
else:
    print(m, ", which is sqare root of ",n, ", is not Prime number.")
```

Q.4 Write a program for print no 1 to 1000 with help of any loop (for /while)

```
for i in range(1,1001):  
    print(i)
```

Ans.

Q.5 Write a program for collect two numbers from user and add them.

Ans.

```
num1=float(input('Enter no1 '))  
num2=float(input('Enter no2 '))  
total=num1+num2  
print('The sum of num1 and num2 is',total)
```