



One Step In Changing Education Chain...

RED & WHITE[®]

GROUP OF INSTITUTES

Question Bank



CORE PYTHON

Data-Type in Detail

1. How string can be written?
2. State difference between single quoted, double quoted and triple quoted string.
3. How can we achieve string formatting?
4. How to inject variable's value in existing string?
5. State all ways to inject variable in string.
6. Explain string formatting with format() method.
7. Explain string formatting with % operator.
8. Explain string formatting with f-string.
9. Can we perform string slicing? If yes, how?
10. How to reverse the given string using string slicing?
11. What is the output of given code snippet?

```
name = "Hello Red and White"
print(name[0 : ])
```
12. What is the output of given code snippet?

```
name = "Red and White"
print(name[ : 7])
```
13. What is the output of given code snippet?

```
name = "Red and White"
print(name[ : : 2])
```
14. What is the output of given code snippet?

```
name = "MIG"
print(name[ : : -1])
```
15. What is the output of given code snippet?

```
name = "Hello Red and White"
print(name[ : : ])
```
16. What is the output of given code snippet?

```
name = " MIG"
print(name[ : : -1] * 2)
```
17. Which are collection datatypes available in python?
18. What is the difference between list and tuple?
19. State mutability difference between list and tuple.
20. Which datatype can be useful for distinctness of values?
21. How to store any 7 services and contact numbers of that service providers in single variable?
22. Which are most useful methods of dictionary?
23. Which datatype supports mathematical set operations?
24. How to add a value in dictionary by user choice?
25. How to update a value in set?
26. What is the difference between set and frozenset?
27. What is the output of given code snippet?

```
fruits = [ 'apple', 'banana', 'orange', 'mango' ]
fruits[1] = 'pineapple'
print(fruits)
```
28. What is the output of given code snippet?

```
fruits = ( 'apple', 'banana', 'orange', 'mango' )
fruits[1] = 'pineapple'
print(fruits)
```

29. What is the output of given code snippet?

```
fruits = [ 'apple', 'banana', 'orange', 'mango' ]
my_fruits = fruits
my_fruits[2] = 'watermalon'
print(fruits, my_fruits)
```

30. What is shallo copy?

31. What is deep copy?

32. State difference between shallow and deep copy.

33. Explain how to achieve deep copy?

34. Explain any 3 widely used methods of list.

35. What is set and in which situation we can use it?

36. What is dictionary? Explain its usage.

37. What is type casting constructor and how to use them?

38. Explain use case of del keyword.

39. How to delete whole collection datatype variable?

40. How to delete second item from given list?

```
courses = [ 'android', 'ccc', 'ios', 'GIM', 'flutter', 'python' ]
```

Control Structure and Looping

1. Which is the maximum number out of given three number (a,b,c) if we use nested if else control structure?
2. Write a Program (WAP) to find minimum number out of given 4 numbers using nested if else.
3. WAP to find maximum number out of given 2 numbers using short hand syntax.
4. WAP to find if given number is positive, negative or neutral.
5. WAP to find factorial of given number using while loop.
6. WAP to find leap years from given two input value using any type of loop.
7. WAP to print below loop using nested for loop:

```
5 4 3 2 1
5 4 3 2
5 4 3
5 4
5
```

8. WAP to print below loop using nested for loop:

```
5
4 5
3 4 5
2 3 4 5
1 2 3 4 5
```

9. Describe all control statements in detail with example.
10. What is the use of pass statement?
11. Describe range() function in detail.
12. What is the output of given code snippet?

```
for i in range(1,10,2):
    print(i, end='-')
```
13. What is the output of given code snippet?

```
for i in range(1, 6):
    for j in rane(1, 10, 2):
        print(f"{i} - {j}", end=" ")
    print()
```
14. What is List Comprehension?
15. Create a list from which all odd numbers are returned from given range using list comprehension.
16. Create a list from which square of each item are returned from given tuple using list comprehension.
17. What is the output of given code snippet?

```
divided = [x for x in range(100) if x % 2 == 0 if x % 6 == 0]
print(divided)
```

Function

1. Why we need to make a function?
2. Which types of functions are available to use?
3. Describe built-in functions with example.
4. Write a syntax to create a function which takes two different types of parameter and returns a List.
5. Write a syntax to create a function which takes three same types of arguments and returns a dictionary.
6. Write a syntax to create a function which takes three same types of arguments and returns all that's values cube. (return multiple values)
7. How to return multiple values and unpack them in a variable?
8. Which kind of datatype is returned while we return multiple values from any function?
9. Create a UDF which finds factorial of given number using recursion.
10. Create a UDF which filters out vowels and consonants from passed string from user input.
11. WAP which illustrates the use of lambda function.
12. Make a simple calculator which only contains lambda functions like syntax.
13. What is *args and **kwargs?
14. What is __doc__?
15. How to write document string?
16. What is recursion and how to use it?
17. What is difference between List and an Array?
18. How to achieve Array's functionality?
19. Which datatype can be used as an Array and How?
20. How to create 2D array of 3x3 of type string which contain sates of India?
21. How to sort an array in ascending order?
22. How to sort an array in descending order?
23. How can we achieve sorting? Explain in brief.
24. What is global variable and how to use them in UDF?
25. What is global keyword?

Object Oriented Programming (OOP)

1. Why we need to make Class?
2. What is object?
3. In what kind of scenario, we can make Class?
4. Explain structure of class.
5. What is the syntax to create a class and an object?
6. WAP to find sum of two variables from two different class.
7. What is constructor?
8. What are the types of constructors?
9. WAP to add two different times using class and object.
e.g.
First Input: 4 feet 13 inch
Second Input: 5 feet 15 inch
Output: 11 feet 4 inch
10. What is destructor?
11. Describe self keyword.
12. What is Encapsulation?
13. Why we need to do encapsulation?
14. State rules of perfect encapsulation.
15. What kind of things we need to introduce in our program to achieve encapsulation?
16. How many types of getters and setters are available in Dart?
17. Write a syntax to create a custom setter named 'setName'.
18. Write a syntax to create a custom getter named 'getName'.
19. How to create array of object in Python?
20. State different use cases of self keyword.
21. WAP to illustrate use of encapsulation by implementing student information displaying. Take data members as listed as below:
id, name, course_name, age, address, college_location, college_name
22. Write a Python Class Student with data member rollno, name, create a constructor with 2 parameters with the same name as data member to initialize data member value, create a member function display to print all values.
23. What is concept of inheritance?
24. How many types of inheritance?
25. Why we need to do inheritance?
26. Of which class's object we have to create to access all class's properties? Base class's or Derived class's?
27. WAP to show employee information using multilevel inheritance. Take data members as listed as below:
id, name, age, role, email, address, salary, company_name, company_address
Distribute above mentioned data members in three different classes. Use encapsulation and multilevel inheritance to print N records of employees.
(Where N = user input)
28. What is concept of Polymorphism?
29. Is method overloading possible in Python?

30. Is method overriding possible in Python? If yes, How?
31. What is the concept of method overloading?
32. What is the concept of method overriding?
33. Is inheritance requiring in method overriding?
34. How many classes requires to perform method overriding? At least and at most?
35. State use of super keyword.
36. State use of issubclass().
37. Can super keyword can be used to call a variable?
38. Can super keyword can be used to call a method?
39. How to call Parent class's properties without making its object?
40. WAP that creates a Shape class with two data members. The class should have area methods to calculate the area of shape. Inherit two classes Rectangle and Triangle from Shape class. Demonstrate method overriding & use of super keyword.
41. Explain commonly used built-in dunder methods.
42. What is operator overloading?
43. How to overload * operator in Python?

Exception Handling

1. What is Exception?
2. State difference between Error and Exception?
3. Give a simple example of Exception.
4. Which mechanism used for handling exception?
5. State syntax of try ... except block.
6. State use of as keyword.
7. How to catch thrown exception in a variable?
8. How to handle general exception in Python?
9. How to create custom exception in Python?
10. From which class we have to extends to use a current class as exception?
11. How to throw any exception wherever we want?
12. Can we throw custom exception? If yes, How?
13. How to handle custom exception and print custom exception message while we handle it?
14. What is use case of finally block?
15. State difference between raise and assert keyword.
16. What is assert and how to use it?
17. WAP that reads marks of five subjects and display average. The application should generate an exception if marks are not in integer format and out of 0-100.

File Handling

1. What is File Handling?
2. How many types of File modes?
3. Difference between write mode and append mode?
4. How to open a file in append mode?
5. WAP to insert 5 student records in a file.
6. WAP to fetch all students records available in some file.
7. How to create a file using Python?
8. What is the difference between text and binary mode in File Handling?
9. What is the function for opening a file in Python?

Modules and Packages

1. What is a module?
2. Which are some built-in modules that are widely used?
3. What is datetime module? How can it help us?
4. What is time module? How can it help us?
5. What is math module? How can it help us?
6. What is random module? How can it help us?
7. What is uuid module? How can it help us?
8. Which method is most used from uuid module?
9. How to generate random numbers using random module?
10. How to generate random password of user chosen length?
11. What is a package?
12. Which are built-in modules?
13. How to make a custom module?
14. How to make a custom package?
15. How to import only specific function from module?
16. How to rename a module while importing?
17. State use of as keyword in detail.
18. State use of import and from keyword in detail.
19. WAP to perform basic arithmetic operation by using your own custom-made module.
20. Is a simple python file behaving like a module? If yes, how?
21. How to make a simple python file as a module?
22. What is `__name__` and `__main__`?
23. What if we specify `__main__` in our python file?
24. State use case of `dir()` function.
25. What is use case of `__init__.py` file?
26. Is it necessary to have a `__init__.py` file in a python package?
27. How to convert regular directory to a python package?

Regular Expression & CLA

1. What is regular expression?
2. How can we use regular expression in python?
3. What is re module? How to use it?
4. How can we retrieve some pattern-wise data?
5. Which module is useful for regular expression related operations?
6. State difference between re.search() and re.match() from re module.
7. State difference between re.search() and re.findall() from re module.
8. How to utilize re.compile() from re module?
9. Difference between ^ and \$ symbol in regular expression.
10. State useful metacharacters for regular expression related operations.
11. Which metacharacter is useful for restrict our pattern of searching to retrieve exact specified number of occurrences?
12. What is special sequence in regular expression?
13. State difference between metacharacters and special sequences in regular expression.
14. What is set in regular expression?
15. How to make a set which allows only alphabetical letters in regular expression?
16. What is the meaning of [0-9] in regular expression?
17. What is the meaning of [+] in regular expression?
18. What is a Match object in regular expression?
19. State use case of span(), string and group() in regular object in context of re.search().
20. What is use case of sys.argv?
21. What is used for taking command line argument in python?
22. How to take command line argument in python?
23. WAP to find maximum number out of given three numbers from command line interface.

Pip & Database

1. What is a package manager?
2. What is pip?
3. Can we publish our custom package in python?
4. Where to publish custom python package?
5. How to use and install any package using pip?
6. Is pip come built-in with python distribution?
7. What is database?
8. What is SQL?
9. Which language is used to interact with database directly?
10. Full form of SQL?
11. What is Server?
12. What is XAMPP?
13. Full form of XAMPP?
14. What is phpMyAdmin?
15. Why we need database?
16. Why we need a server?
17. What is most popular relational database?
18. Which module we need to install in python to interact with database?
19. What is mysql-connector module?
20. What is CRUD operation?
21. How to import mysql-connector module in python?
22. WAP which connects to database called 'users'.
23. What properties are required in mysql.connector.connect() as a arguments?
24. What is cursor in mysql.connector?
25. What is Primary key in database?
26. Write a SQL query which insert a single record of student having id and name attributes.
27. How to insert multiple records in database using python?
28. What is commit() in mysql.connector?
29. What if we forgot to call commit() in mysql.connector?
30. Is it mandatory to call commit() after each insertion of record in database?
31. State difference between execute() and executemany() in mysql.connector?
32. What are required arguments in execute() and executemany() in mysql.connector()?
33. Write a SQL query which selects all records from given table.
34. What is the difference between fetchall() and fetchone() in mysql.connector?
35. How to retrieve first record form any table using python?
36. What is SQL Injection? How to prevent it?
37. How can we apply different filter in SQL query?
38. Write a SQL query to delete a record from database using python.
39. How to retrieve affected rows length from database using python?
40. How to delete a table using SQL query?
41. How to safely delete a table using SQL query?
42. How to update a record in database using SQL query?

43. State use case of LIMIT clause in SQL query.

GUI with Tkinter

1. What is GUI?
2. What is CLI?
3. Difference between CLI and GUI.
4. From which module we can build our GUI?
5. What is tkinter module?
6. How to import tkinter module with renaming?
7. What is Tk() from tkinter module?
8. How to rename title of our GUI window?
9. What is Widget in tkinter?
10. What is mainloop() in tkinter?
11. Give list of widgets in tkinter.
12. What is geometry management in tkinter?
13. How can we apply geometry management in tkinter?
14. State difference between pack(), grid() and place() in tkinter.
15. What is Frame widget in tkinter?
16. Is it compulsory to use Frame widget to build GUI using tkinter?
17. How to make a button in GUI using tkinter?
18. What are required arguments in Button widget in tkinter?
19. How to change background color of a button in tkinter?
20. How to change text color of a button in tkinter?
21. How to attach a click (left-click) event to a button in tkinter?
22. How to attach a middle-click event to a button in tkinter?
23. How to attach a right-click event to a button in tkinter?
24. What is pack() in tkinter?
25. What is grid() in tkinter?
26. What is place() in tkinter?
27. State arguments of pack() in tkinter.
28. State arguments of grid() in tkinter.
29. State arguments of place() in tkinter.
30. How to bind a function call to a button click?
31. How to bind mouse clicking event to a button in tkinter?
32. How many types of pop-up box can be used in tkinter?
33. How to import and use messagebox in tkinter?
34. Which widget is used to display an image in tkinter?
35. What padx and pady properties does in grid() in tkinter?
36. What is pillow library?
37. How to display an image using pillow library in tkinter?
38. How to keep a reference of an image object in tkinter using pillow library?