

**IBM – Advanced Diploma on IT, Networking and Cloud Computing**  
**CORE MODULE – 04 (PRACTICAL)**

1. Write a function in Python that takes a sequence of numbers and determines whether all the numbers are different from each other.
2. Write a program in Python that removes and prints every third number from a list of numbers until the list is empty.
3. Write a program in Python to count the number of each character in a text file.
4. Write a program in Python that accepts a positive number and subtracts from it the sum of its digits, and so on. Continue this operation until the number is positive.
5. Write a program in Python to find the total number of even or odd divisors of a given integer.
6. Write a program in Python that calculates the area of a circle based on the radius entered by the user.
7. Write a program in Python that accepts the user's first and last name and prints them in reverse order with a space between them.
8. Write a program in Python to display the first and last colors from the following list.  
color\_list = ["Red","Green","White" ,"Black"]
9. Write a program in Python that accepts an integer (n) and computes the value of  $n+nn+nnn$ .
10. Write a program in Python to multiply all the items in a list.
11. Write a program in Python to print a specified list after removing the 0th, 4th and 5th elements.  
Sample List : ['Red', 'Green', 'White', 'Black', 'Pink', 'Yellow']  
Expected Output : ['Green', 'White', 'Black']
12. Write a program in Python to add a key to a dictionary.  
Sample Dictionary : {0: 10, 1: 20}  
Expected Result : {0: 10, 1: 20, 2: 30}
13. Write a program in Python to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are the square of the keys.  
Sample Dictionary  
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 225}
14. Write a program in Python to add an item to a tuple.
15. Define a program in Python to create a function student(). Using function attributes display the names of all arguments.
16. Develop a Python class named Student with two attributes: student\_id, student\_name. Add a new attribute: student\_class. Create a function to display all attributes and their values in the Student class.
17. Create student database in mysql and connect using python.
18. Create a simple python Flask app with at least 3 basic routes.
19. Create django application that reads data from CSV and display on page.
20. Create django application validates user credentials on login page.
21. Perform CRUD operations on MongoDB database using python.

**YOU CAN FIND  
STUDY MATERIAL  
ON THE  
BHARAT SKILLS PORTAL**

Visit: **[bharatskills.gov.in](http://bharatskills.gov.in)**



Please consider the environment  
before printing this document