Time: 3 Hours   Max. Marks: 100

General Instructions:
1. The question paper comprises three sections, A, B, and C. You are expected to answer them as directed.
2. Section A - Question No- 1 is 1 marker & Question No- 2 carries 2 mark each.
3. Section B - Question No-3 is based on external choice carrying 6 marks each.
4. Section C - Questions No. 4-8 are within unit choice questions carrying 10 marks each.
5. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

<div align="center">SECTION A   20</div>

1. Attempt all parts:-

1-a.   Which type of Programming does Python support? (CO1)   1

          (a) object-oriented programming
          (b) Structured programming
          (c) Functional programming
          (d) All of the mentioned

1-b.   Which is not a python IDE? (CO1)   1

          (a) IDLE
          (b) MATLAB
          (c) Pycharm
          (d) Anconda-IDE

1-c.   What will be the value of the following Python expression? (CO2)   1
          5+2*3 -4

          (a) 11
          (b) 26
          (c) 7
          (d) 3

1-d.   what is output of code below: (CO2)   1
          S=0
          for k in range(5,11,3):
              S+=k
          print(S)

          (a) 11
          (b) 24
          (c) 8
          (d) 13

1-e.   What will be the output of the following Python code? (CO3)   1
          def test(x,y):
              return x**y
          print(test(2,3))

          (a) None
          (b) 6
          (c) 9
          (d) 8

1-f. which of following can be used to define a function in python. (CO3)   1

      (a) raise

      (b) try

      (c) lambda

      (d) new

1-g. Choose the correct function to get the ASCII code of a character. (CO4)   1

      (a) char('char')

      (b) ord('char')

      (c) ascii('char')

      (d) code('char')

1-h. what will be the value in 'a' after user giving space separated input as: 1 2 3 4 (CO4)   1
a= list(map(int, input().split()))

      (a) ['1', '2', '3', '4']

      (b) [1, 2, 3, 4]

      (c) [10]

      (d) (1,2,3,4)

1-i. Which statement will read 5 characters from a file object 'f'? (CO5)   1

      (a) f.read()

      (b) f.read(5)

      (c) f.reads(5)

      (d) None of the above

1-j. What will be the output of the following Python code? (CO5)   1

```
def f1():
try:
   return 1
finally:
   return 2
k = f1()
print(k)
```

      (a) 1

      (b) 3

      (c) 2

      (d) error, there is more than one return statement in a single try-finally block

2. Attempt all parts:-

2.a. What is main memory? (CO1)   2

2.b. Illustrate Range() function?   (CO2)   2

2.c. Write a lambda function to swap two numbers.   (CO3)   2

2.d. Differentiate list and dictionary data structures in python? (CO4)   2

2.e. When "NameError" Occurs in python program? Give example. (CO5)   2

<div align="center">SECTION B   30</div>

3. Answer any <u>five</u> of the following:-

3-a. Write a program to compute Simple Interest and Compound Interest. (CO1)   6

3-b. Write Ethics and IT policy in of software development companies. (CO1)   6

3-c. Write a Python Program to Find HCF of two numbers.   (CO2)   6

3-d. Demonstrate use of else clause with a loop by example.   (CO2)   6

3-e. What are packages in python? Write any two built-in package. Explain the process to create a package. (CO3)   6

3.f.	Differentiate between the following methods of set using example: a)difference() and difference_update() b)union() and update() (CO4)	6
3.g.	Write a program to catch a Divide by zero exception. Add a finally block too. (CO5)	6

<div align="center">SECTION C   50</div>

4. Answer any <u>one</u> of the following:-

4-a.	Explain the Python development cycle in detail. (CO1)	10
4-b.	Write a program to calculate salary of an employee given his basic pay(to be entered by the user), HRA =15 per cent of basic pay, TA=8 per cent of basic pay. define HRA and TA as constants and use them to calculate the salary of the employee. (CO1)	10

5. Answer any <u>one</u> of the following:-

5-a.	What is palindrome number? Write a Python Program to check if a number is Palindrome or not. (CO2)	10
5-b.	Write a Python program to find sum of terms of a Fibonacci series upto n terms. (CO2)	10

6. Answer any <u>one</u> of the following:-

6-a.	Write a python program to compute factorial of any integer number using: (CO3) 1. Normal function 2. Reduce and lambda function	10
6-b.	b) Create two python modules 'niet1' and 'niet2'. In 'niet1' develop two functions 'add' and 'sub' and also create two functions 'div' and 'mul' in 'niet2'. Write a python program for arithmetic calculator using developed modules. (CO3)	10

7. Answer any <u>one</u> of the following:-

7-a.	Explain all methods used in dictionary with example. (CO4)	10
7-b.	Explain packing and unpacking of elements in sequences .How can we return the values in the function using the concept of packing and unpacking?Explain (CO4)	10

8. Answer any <u>one</u> of the following:-

8-a.	When we use Raise, Assert statements in python programing? Elaborate with suitable examples. (CO5)	10
8-b.	Name the three modes in which file can be opened in python. Read one file 'niet1.txt', isolate vowels from the file and write the output into another file 'niet2.txt'. (CO5)	10