Graphic Era
HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

End Term (Even) Semester Examination May-June 2025

Roll no. 2492113 ....

Name of the Program and semester: BCA/ BCA(AIDS)
Name of the Course: Fundamentals of *Python Programming*
Course Code: TBC 211/TBD 202
Time: 3 hours

Maximum Marks: 100

Note:
- *(i)* All the questions are compulsory.
- *(ii)* Answer any two sub questions from a, b and c in each main question.
- *(iii)* Total marks for each question is 20 (twenty).
- *(iv)* Each sub-question carries 10 marks.

Q1. (2X10=20 Marks) Co1
a. Define the various data types available in Python? Differentiate between mutable and immutable data types.

b. Write a python program to find the sum of natural numbers upto length (N). Read N from the console..

c. WAP to input some line of text and print the following statistics:
Number of words:
Number of characters (including spaces):
Number of digits (if any):

Q2. (2X10=20 Marks) Co 3

a. What are Lambda functions? How the lambda functions differ from User defined functions? Write a python program to calculate the power of a number using recursion.

b What is a class? How to define class in python? How to initiate a class and how the class members are accessed? Create a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a circle.

c Illustrate the following Set methods with an example.
a) intersection()
b) union()
c) issubset()
d) difference()
e) discard()

Q3. (2X10=20 Marks) Co 4 &Co 5
a Explain operator overloading. Write a python program to overload > operator to compare two objects.

b. Explain about how exceptions are handled in python? Define the various blocks briefly. Write a program to implement divide by zero exception.

c. Explain the concept of file handling in python. Write a python program to create a file name "source.txt" and copy the content of this file to another file named "target.txt".

Q4. (2X10=20 Marks) Co2
a Define Inheritance. Explain different types of Inheritance with the implementation in python.

End Term (Even) Semester Examination May-June 2025

b. Explain how the base class constructor is invoked using the object of derived class? Define the use of super() function to solve method overriding.

c. What are user defined functions? How many different types of parameters are available in python give example to illustrate the answer?

Q5. (2X10=20 Marks) Co2

a. Write a python GUI program to create the following using tkinter module:
- i. Textbox
- ii. Radio button
- iii. Message box
- iv. List box
- v. Frame

b. What is a socket? Explain how socket can be established to the internet using python code.

C Explain the following:
- i indentation
- ii class and instance variable
- iii while..else statement
- iv proram to count the number of object created for a class.
- v threads