S.No. : 207 NCS4201

No. of Printed Pages : 04

Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 43208 Roll No. | 1 | 2 | 5 | 0 | 4 | 3 | 2 | 2 | 8 | 7 |

B. Tech Examination 2026

(Even Semester)

PROGRAMMING CONCEPTS WITH PYTHON

Time : Three Hours] *[Maximum Marks : 60*

Note :– Attempt all questions.

SECTION–A

1. Attempt all parts of the following : $8 \times 1 = 8$

   (a) What are the main steps in the pyhon programming cycle?

   (b) What is operator precedence in python?

   (c) What is boolean expression?

   (d) What is the purpose of the if else statement in python?

   (e) What is the time complexity of the sieve of eratosthenes algorithm?

[P. T. O.

(f) What is the purpose of the imt-method in class?

(g) What is the purpose of an ADT interface in python?

(h) What is method overriding in inheritance?

SECTION–B

2. Attempt any two part of the following: $6 \times 2 = 12$

(a) Desccribe string operations in python. Explain length, concatenation, repetition and slicing.

(b) Explain the sieve of eratosthenes algorithm, ADT and inheritance in python.

(c) Describe list data structure in python and write a program to find sum of elements in a list.

(d) Explain file handling in pyhon and write a program to write data into a file.

SECTION–C

ote:- Attempt any two parts from each question .
All part carry equal marks. $8 \times 5 = 40$

3. (a) Explain conditional statement in python. Also explain while loop and forloop with example.

   (b) Explain arithmatic operators, operator precedence and boolean expressiions with example.

   (c) Explain functions in python with suitable examples and also discuss default and keyword arguments.

4. (a) Describe string operations in python. Explain different string methods: lower (), upper (), strip (), replace (), with example.

   (b) What are file handling different modes? Also explain read (), readline(), methods with example.

   (c) What is exception in python? Explain try, except, else and finally blocks.

5. (a) Explain how to import and use module. Also explain pandas and numpy with example.

(b) Define class and objecct in python and explain object oriented programming concept with encapsulation and abstraction.

(c) What is inheritance in python? Explain different types of inheritance with example.

5. (a) Explain numeric data types in python (int, float, complex) and describe type conversion between them.

(b) Compare list, tuple, set and dictionary data types in python with respect to mutability and ordering.

(c) Explain detail the concept of object oriented programming (oop) in python and discuss its key priciples, advantages, real world applications with suitable examples.