3001

B.C.A. (SEM. - I) EXAMINATION, 2025-26

(NEP - 2020)

COURSE / PAPER NAME : COMPUTER APPLICATIONS PROGRAMMING PRINCIPLES USING PYTHON

PAPER-I

COURSE CODE - S020101T

[Time : 2 Hours] [Maximum Marks : 75]

Instructions: Attempt all sections as per instructions.

Section - A

Note: Attempt all questions. Give answer of each question in about 50 words.

(10 × 3 = 30)

Q1.

a. Define an algorithm. Write its main characteristics.

b. Explain the basic organization of a computer system.

c. What is Python interpreter? Differentiate between Python shell and script mode.

d. Explain identifiers and keywords in Python with examples.

e. What are number systems? Name different types of number systems.

f. Explain arithmetic and relational operators in Python.

g. What is indentation in Python? Why is it important?

h. Define string traversal with an example.

i. What is a list in Python? Write any two applications of lists.

j. Explain break and continue statements with suitable examples.

Section - B

Note: Attempt any four questions. Give answer of each question in about 150 words. (6 × 4 = 24)

Q2. Explain CPU, memory, and I/O units with a neat diagram.

Q3. Write a program in Python to compute the factorial of a given number.

Q4. Explain input and output statements in Python with examples.

Q5. Describe looping statements in Python.

Q6. Explain functions in Python? Explain the lambda function and write a program to demonstrate the working of the lambda function.

Q7. Discuss string operations and built-in string functions in Python.

Q8. Explain list creation, slicing, and traversal with examples.

Q9. Explain sorting and searching techniques used in Python programs.

Section - C

Note: Attempt any two questions. Give answer of each question in about 450 words. (10.5 × 2 = 21)

Q10. Write a Python program to define a Student class having set_student() and get_student() methods. Use set_student() to input the details of 10 students and get_student() to display their information.

Q11. Describe object-oriented programming concepts in Python. Explain class, object, and method with examples.

Q12. Explain file handling in Python. Discuss different file operations with examples.

Q13. Discuss built-in data structures in Python, such as tuples, sets, dictionaries, stacks, and queues.

Romance data structures

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