

Roll No.

Total No. of Pages : 02

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B.Tech. (CSE/AI&ML) (Sem-5)

PROGRAMMING IN PYTHON

Subject Code :BTAIML501-20

M.Code :93173

Date of Examination : 27-11-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Write Briefly:

- Mention one key limitation of Python and provide a context where it becomes critical.
- Identify the output of: `type(5 + 2.0)` and justify it.
- Interpret the role of indentation in Python syntax execution.
- Predict the result of: `print("10" + str(5))` and explain why?
- Describe the behavior of the expression `3 + 4 * 2` in terms of operator precedence.
- Compare the immutability of tuples and strings with an example.
- Suggest a situation where using a set would be preferable over a list.
- Distinguish between local and global variables using a short function example.
- Outline how exceptions can be chained using `raise from` in Python.
- State one use case of the 'with' statement while dealing with file handling.

SECTION - B

2. Construct a Python function to check whether a given number is prime.
3. Analyze the use of break and continue inside nested loops with code illustration.
4. Implement a program that reads a string and returns a dictionary of character frequencies.
5. Illustrate the difference between user-defined exceptions and built-in exceptions with examples.
6. Demonstrate the use of named tuple and compare it with a standard tuple through a practical example.

SECTION - C

7. Design a Python program using object-oriented concepts for managing book records (title, author, price). Include features to display and update price.
8. Develop a recursive function to compute the sum of digits of a given number. Highlight the concept of variable scope and lifetime.
9. Create a module that includes a custom function and import it into another Python script. Include steps of module creation, importing and usage.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.