

M. Sc. DEGREE END SEMESTER EXAMINATION - APRIL 2026
SEMESTER 2: COMPUTER SCIENCE (ARTIFICIAL INTELLIGENCE)
COURSE: 24P2CAIT06 : PROGRAMMING IN PYTHON

(For Regular 2025 Admission and Improvement/Supplementary 2024 Admission)

Time: Three hours

Max. Weight: 30

PART A**Answer any 8 questions****Weight: 1**

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| 1. Explain the difference between the / and // arithmetic operators. | (U, CO1) |
| 2. Explain the difference between a list and a tuple in Python. | (U,CO2) |
| 3. Define python dictionaries and also give the command to get all keys and values. | (R, CO2) |
| 4. Describe the purpose of for...else loop. | (U, CO3) |
| 5. Define a function and explain its importance in modular programming. | (U,CO4) |
| 6. List two methods for opening a file in Python and state their usage. | (U,CO5) |
| 7. Explain the difference between the read() and readline() methods for file reading. | (U, CO5) |
| 8. Explain range() function with an example. | (U, CO3) |
| 9. Describe the use of the global keyword in Python. | (U, CO4) |
| 10. Explain Indentation and its use with an example. | (U,CO1) |
| (1 x 8 = 8) | |

PART B**Answer any 6 questions****Weights : 2**

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| 11. Develop a Python program to check if a given number is prime or not. | (A, CO3) |
| 12. Develop a Python program that takes a list of numbers as input and returns the sum of all even numbers in the list. | (A, CO3) |
| 13. Develop a Python program to reverse a given string using slicing. | (A, CO2) |
| 14. Explain the different types of function arguments with suitable examples. | (U,CO4) |
| 15. Develop a Python program to print the smallest and largest elements from a list. | (A, CO2) |
| 16. Examine the use of try and except blocks in python with suitable examples. | (A, CO5) |
| 17. Illustrate the use of lambda functions with an example. | (A, CO4) |
| 18. Explain the difference between Interactive mode and Script mode. | (U, CO1) |
| (2 x 6 = 12) | |

PART C**Answer any 2 questions****Weights : 5**

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| 19. Describe the concept of a package in Python and explain its purpose in organizing modules. Illustrate how to import modules from a package using different methods. | (U, CO5) |
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20. Illustrate the functionality of nested if statements and nested loops with practical examples. Distinguish between the use cases of break, continue and pass statements within loops. (A, CO3)
 21. Develop a program that utilizes various built-in string functions and methods. Explain the purpose of each function used. (A, CO2)
 22. Answer the following questions
 - a. Evaluate the importance of namespaces and scope in Python.
 - b. Explain the functionalities of the time, calendar, and datetime modules. (A, CO4)
- (5 x 2 = 10)**

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Develop fundamental programming skills by understanding program logic, utilizing flowcharts for problem-solving, and implementing basic Python syntax, including data types, operators, input/output functions, and program structure.	A	1,10,18	4
CO 2	Effectively utilize various Python data types and their associated operations to manipulate and manage data within programs.	A	2,3,13,15,21	11
CO 3	Implement flow control mechanisms in Python using conditional statements and loops to control program execution.	A	4,8, 11,12,20	11
CO 4	Design and implement modular and reusable code using functions, including various argument types and lambda functions, and effectively utilize built-in and custom modules in Python.	Cr	5,9,14,17,22	11
CO 5	Utilize Python's file input/output operations for handling data, including reading, writing, and managing files and directories.	A	6,7,16,19	9

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;