Reg. No. : 8 1 0 0 2 3 6 2 2 0 4 6

Question Paper Code : 60837

M.C.A. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

First Semester

MC 4103 – PYTHON PROGRAMMING

(Regulations 2021)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give the features of python.
2. What is python interpreter?
3. List the standard data types in python.
4. What are the rules for writing an identifier?
5. What is exception handling?
6. List the function used for file handling.
7. What is module and package in Python?
8. Which method is used to read the contents of a file which is already created?
9. Define Encapsulation.
10. How python handle persistence?

PART B — (5 × 13 = 65 marks)

11. (a) Describe Arithmetic Operators, Assignment Operators, Comparison Operators, Logical Operators and Bitwise Operators in detail with examples.

Or

(b) (i) Explain command line arguments and write a program to demonstrate command line arguments. (7)

(ii) Write a Python program to check if a 3 digit number is Armstrong number or not. (6)

12. (a) What is Dictionary? Explain Python dictionaries in detail discussing its operations and methods.

Or

(b) What are the basic list operations that can be performed in Python? Explain each operation with its syntax and example.

13. (a) Write a function that reads a file "file1" and evaluates and display the number of words and vowels in the file.

Or

(b) Discuss the fundamental rules that enable an application to create and process valid names for files and directories in Windows and Linux Operating systems.

14. (a) List and explain the inbuild packages. Show the procedure to develop user defined packages.

Or

(b) Explain the role of NUMPY and Pandas in Data Visualization.

15. (a) Explain the concept of overloading and write Python Program to create a class called as Complex and Implement ____ add ____ ( ) Method to Add Two Complex Numbers. Display the result by overloading the + Operator.

Or

(b) Explain the concept of polymorphism and write python program to calculate area and perimeter of different shapes using polymorphism.

PART C — (1 × 15 = 15 marks)

16. (a) A wine seller had three types of wine. Find the least possible number of casks of equal size in which different types of wine can be filled without mixing. For example if 403 litres of 1st kind. 434 litres of 2nd kind and 465 litres of 3rd kind of wines are available then 42 equal size casks are required to fill the wine without mixing. Also check that the minimum quantity of each kind of wine must be above 400 litres otherwise gives an error message that "Number of litres must be above 400". Write python Program for the above problem.

Or

(b) Write a python program to check whether a number can be expressed as a sum of two prime numbers. For example if the number is 40 then 3 + 37 = 40,where 3 and 37 are prime numbers, 11 + 29 = 40 where 11 and 29 are prime numbers and 17 + 23 = 40 where prime number where 17 and 23 are prime numbers. So the list of pair of prime numbers are 3 37, 11 29, 17 23.