

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI - 600 086
(For candidates admitted from the academic year 2025-26)

B. Sc. DEGREE EXAMINATION, APRIL 2026
MATHEMATICS WITH COMPUTER APPLICATIONS
SECOND SEMESTER

COURSE : MAJOR CORE
PAPER : PROGRAMMING IN PYTHON WITH PRACTICAL (PRACTICAL)
SUBJECT CODE : 25MC/MC/PY25
TIME : 90 Minutes **MAX. MARKS : 50**

Q. No.	SECTION E (30 Marks)	CO	KL
15.	<p>(i) Write a Python program to perform the following:</p> <p>(a) Define a value-returning function that accepts a list of numbers and returns the sum and average of the elements.</p> <p>(b) Use a recursive function to find the factorial of a given number.</p> <p>(c) Create a list using list comprehension that stores the squares of even numbers from the given list.</p> <p>(d) Display all results with proper messages.</p> <p>(ii) Write a program to input your friend's names and their Phone Numbers and store them in the dictionary as the key-value pair. Perform the following operations on the dictionary:</p> <p>(a) Display the name and phone number of all your friends</p> <p>(b) Add a new key-value pair in this dictionary and display</p> <p>(c) the modified dictionary</p> <p>(d) Delete a particular friend from the dictionary</p> <p>(e) Modify the phone number of an existing friend</p> <p>(f) Check if a friend is present in the dictionary or not</p> <p>(g) Display the dictionary in sorted order of names</p> <p align="right">(15+15)</p>	4	4

Q. No.	SECTION F (20 Marks)	CO	KL
16.	<p>(i) Write a Python program that analyzes student performance data stored in a NumPy array. One array contains students' names, the second array should contain their scores in four subjects: Math, Physics, Chemistry and Biology. The program should perform the following tasks:</p> <ul style="list-style-type: none"> (a) Calculate the average score for each student across all subjects. (b) Calculate the average score for each subject across all students. (c) Determine the highest score in each subject. (d) Identify students who scored above 80 in Math and Physics. (e) Create a new array containing only the scores of students who meet the above criteria. <p>(ii) Write a menu driven Python program to perform:</p> <ul style="list-style-type: none"> (a) Addition (b) Subtraction (c) Multiplication (d) Division (e) Exit <p>Use a while loop and if-elif-else ladder</p> <p style="text-align: right;">(10+10)</p>	5	5
