

Sant Gadge Baba Amravati University, Amravati

M.Sc. - I (Mathematics) Semester – II (NEP)

2023-24

Practical: Mathematics with Scilab

Group A

1. Design and execute a program to find the average of three numbers.
2. Design and execute a program to find the sum, difference, multiplication and division of two numbers
3. Design and execute a program to find largest and smallest of three numbers
4. Design and execute a program to generate even numbers from 1 to n
5. Design and execute a program to generate first n even numbers
6. Design and execute a program to odd numbers between 50 to 100
7. Design and execute a program to generate the sequence 1, 4, 7, 10, 13, -----
8. Design and execute a program to display multiplication table for n numbers
9. Design and execute a program to find the sum of n natural numbers and hence between 100 to 250
10. Design and execute a program to find area and volume of the sphere

Group B

1. Design and execute a program to find the roots of the polynomials given below: $x^2 - 9x + 9 = 0$ and $x^2 + x - 12 = 0$
2. Design and execute a program to solve the ODE $dy/dx = \cos(t)$ with an initial value condition $y(0) = 0$ and plot the graph.
3. Design and execute a program to plot the graph of trigonometric functions by using Scilab
4. Design and execute a program to plot the graphs of functions: $\log(ax+b)$, ax , $(ax+b)^{1/2}$, absolute value of $(ax+b)$
5. Design and execute the program to find the average of n numbers
6. Design and execute a program to find factorial of positive numbers
7. Design and execute a program to solve the ODE $dy/dt = y^2 - y \sin(t) + \cos(t)$ with the initial condition $y(0) = 0$ and plot the graph
8. Design and execute a menu driven program to obtain square and cube of numbers
9. Design and execute a program for $\sin(ax+b)$ and $\cos(ax+b)$ and plot the graph.

Distribution of Practical Marks:

A) Internal Practical Marks

- | | | |
|-----|---------------------------|------------|
| i) | Internal Assessment ----- | = 30 marks |
| ii) | Practical Record ----- | = 20 |

Total ----- = 50

B) External / University Practical Marks

- i) Design and Performed Practical
(Any One of Each Group A and B) ----- = 30 marks
 - ii) Viva-Voce Exam. ----- = 20
- Total ----- = 50**

Note: In external practical students have to perform one practical from group A and one practical from group B. Each practical carry 15 marks.