# DIPLOMA IN INSTRUMENTATION AND CONTROL ENGINEERING

## CENTRALIZED QUESTION BANK

## 1042234440- VIRTUAL INSTRUMENTATION

## DIRECTORATE OF TECHNICAL EDUCATION GOVERNMENT OF TAMILNADU

## DIPLOMA END SEMESTER / YEAR EXAMINATION – 2025

**Course:** Instrumentation and Control Engineering

**Subject :** Virtual Instrumentation

**QP Code :** 1042234440

**Time :** 3 Hours  **Date :**  **Session:**  **Max Marks:** 100

### Answer the following Questions

1. Create a VI that takes temperature in degree Centigrade as input and displays the temperature both in degree Centigrade and degree Fahrenheit. Use temperature indicator for display.

2. Create a VI to evaluate the equation y = 3a + 2b + c using arithmetic block or formula node.

3. Create a VI to compute and display the roots of a quadratic equation: $x^2+5x+6$ by taking the values of a, b and c as inputs.

4. Create a VI to simulate a simple calculate or which performs addition, subtraction, multiplication and division using case structure.

5. Design a VI to display whether the given integer is odd or even.

6. Design a VI that takes two integers as input and displays its remainder and quotient.

7. Draw the function generator and test its output using LABVIEW software

8. Design virtual CRO capable of addition of two waveforms with front panel and block diagram.

9. Design front panel and block diagram to simulate logic gate functions: AND, OR, NOT, NAND, NOR, EX-OR and EX-NOR.

10. Design front panel and block diagram to simulate temperature control system

11. Design front panel and block diagram to simulate tank control system.

12. Design a VI to simulate half adder.


### Allocation of Marks

| Sl. No | Description | Marks |
|--------|-------------|-------|
| 1 | Drawing Front Panel & Block Diagram in Paper | 20 |
| 2 | Constructing Front Panel & Block Diagram in Simulator | 30 |
| 3 | Execution | 10 |
| 4 | Result | 20 |
| 5 | Record Note | 10 |
| 6 | Viva Voce | 10 |
| | **Total** | **100** |