

071305T4ELC

ELECTRONICS CRAFTPERSON LEVEL 5

ENG/OS/ET/CR/04/5/A

Apply Electrical Instrumentation

Nov/Dec 2024



TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL

PRACTICE

INSTRUCTIONS TO CANDIDATE

1. You are required to perform the following task

TASK: Mount and solder a Q meter circuit

2. You have been provided with the following resources for the practical tasks:

- RF Oscillator (50KHz – 50Mhz)
- Shunt resistor 0.02Ω
- Inductor coil of unknown value
- Variable capacitor (30-460pF)
- Thermocouple voltmeter
- Electronic voltmeter (VTVM)
- AC Supply 240v 50Hz
- Solder wire
- Printed circuit board 14.5cm x 6.5cm
- Multimeter

- Connecting wires
- Solder sucker
- Soldering gun
- Side cutters
- Wire Stripper
- Soldering gun stand

TASK: Figure 1 shows an instrument that is designed to measure some of electrical properties of coils and capacitors by measuring the Q value of an R-L-C circuit.

- Using the components and equipment provided, mount and solder the circuit
- Power the constructed circuit and determine the value of the following:
 - E
 - E_C
 - Q factor
 - L and R under these conditions by setting the oscillator to a given frequency and vary the value of C constant and adjusting the oscillator frequency

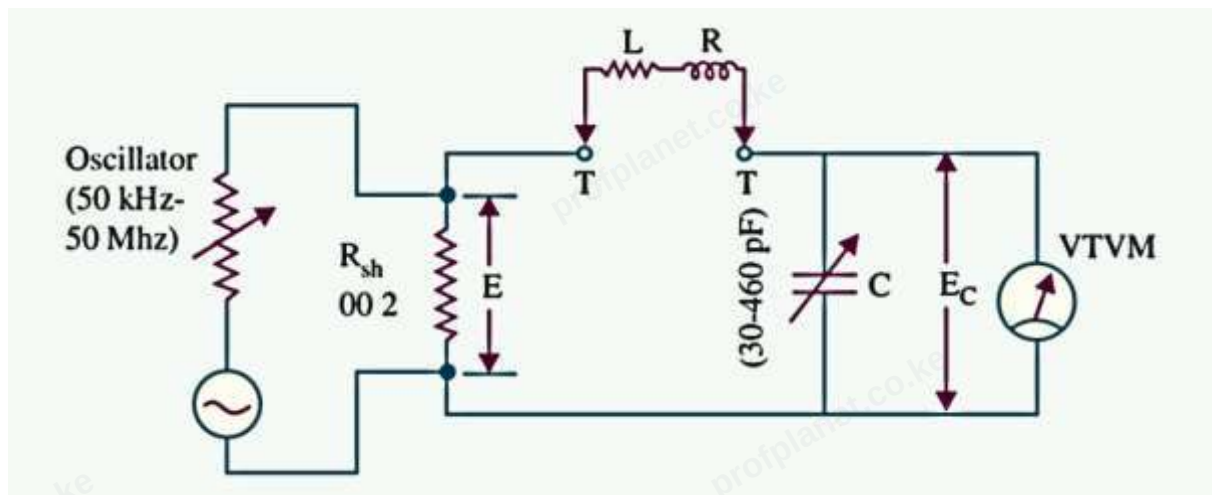


Figure 1