

071305T4ELC

ELECTRONICS ENGINEERING LEVEL 5

ENG/OS/ET/CR/04/5

Apply Electrical Instrumentation

July/August 2025



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

PRACTICAL ASSESSMENT

Time: 3 HOURS

INSTRUCTIONS TO CANDIDATE:

1. Figure 1 shows a circuit diagram for a sine waveform generator using Op Amp 741 IC.

You are required to perform the following tasks.

TASK 1: Mount the circuit as shown in figure 1 on a breadboard.

TASK 2: Connect the circuit output to a CRO, and;

- a. Draw the displayed wave on CRO.
- b. Determine the frequency from the displayed waveform.

TASK 3: Mount and solder your circuit on a copper stripboard.

TASK 4: Carry out the following tests and compile a report.

- a. Continuity test
- b. Polarity test

TASK 5: Connect the output of soldered circuit to the CRO, and;

- a. Draw the displayed wave on CRO.
- b. Determine the frequency from the displayed waveform.

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

- i. Op Amp 741 IC
- ii. Resistors $1k\Omega$, $10k\Omega$, and $470k\Omega$
- iii. Ceramic capacitors of $0.01 \mu\text{F}$
- iv. Breadboard
- v. Stripboard (60mm x 50mm)
- vi. Jumper wires
- vii. Electronic toolkit
- viii. Digital multimeter
- ix. Oscilloscope
- x. 12V D.C power supply
- xi. Soldering gun and wire
- xii. Side cutter/combinational pliers
- xiii. Silverline soldering iron stand
- xiv. Soldering sucker

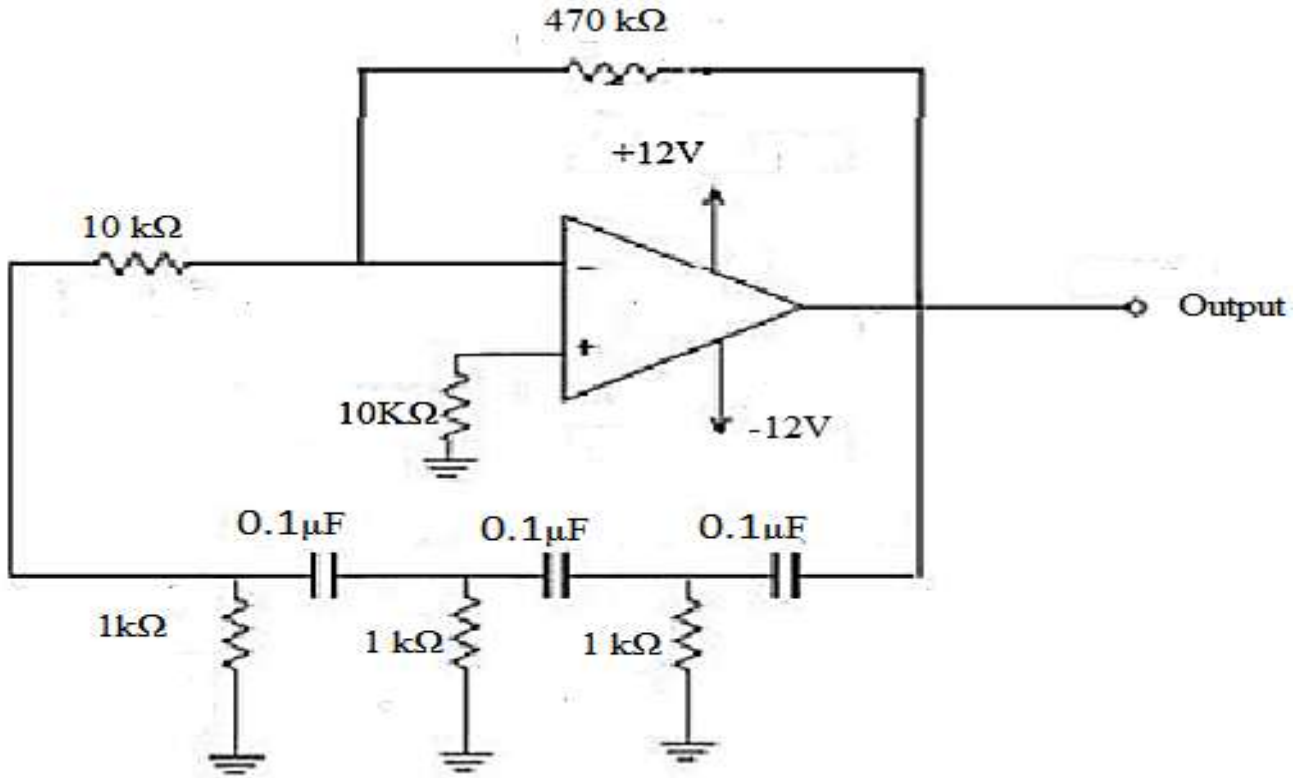


Figure 1.