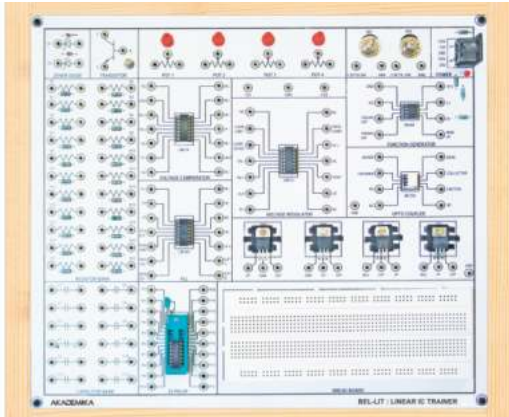


## BEL - LIT

### Linear IC Trainer



#### FEATURES

- Covers wide range of analog applications using monolithic ICs such as op-amp (LM710), PLL (NE565), Function Generator, Opto-coupler (MCT2E) and Regulators (LM723, 7805, 7905, LM317 and LM337)
- On-board resources such as resistor, capacitor, diode and potentiometer banks of different values are provided
- Single board system capable of covering minimum 20 components along with on-board resources
- EEE symbols of all components provided on the PCB.

#### SPECIFICATIONS

##### On-board linear ICs

- High speed comparator IC-710
- Function generator IC-ICL8038
- Phase locked loop IC NE-565
- Fixed voltage regulator LM7805, LM7905
- Variable voltage regulator IC-317,337
- Opto-coupler MCT2E

##### On board interfaces

- Op-Amp (LM710-14 pins)
- PLL (NE565-14 pins)
- Function Generation (NE566-8 pins)
- Opto-coupler (MCT2E-8 pins)
- Regulators (LM723, 7805, 7905, LM317, and LM337).
- Resistor Bank (22 resistors) 100E to 510k $\Omega$
- Capacitor Bank (12 capacitors) 0.1 $\mu$ F to 680pF
- Diodes (2 Zener diodes) 2.4V to 5.1V
- IC Socket (5 ICs) 1k $\Omega$  to 100k $\Omega$
- LEDs (1)
- Potentiometers (4 pots)
- Transistor Bank (1 NPN Transistor-BC547)
- Fixed Power Supply of  $\pm 30V$  and  $\pm 12V$
- Dual power supply with helical pot of  $+1.5V$  to  $+20V$  and  $-1.5V$  to  $-20V$
- Bread board (175mmx63mm) area to allow construction of circuits using external components along with on board resources
- All Interconnections are made using 2mm patch cords
- 20 pins ZIF socket

#### EXPERIMENTS

##### Using high speed comparator IC-710

- Study the parameters of LM 710
- To measure slew rate
- To measure input offset voltage, input offset current
- To measure CMRR
- To measure response time comparator
- Application as comparator
- Application as pulse width modulator
- Application as level detector and schmitt trigger

##### Phase locked loop IC NE-565

- Measurement of centre frequency  $F_c$
- To study VCO linearity and sensitivity
- Measurement of capture range and lock range
- PLL as a multiplier

##### Fixed voltage regulator LM7805, LM7905

- To measure line regulation
- To measure load regulation
- To boost the output voltage using Zener diode and Resistor

##### Variable voltage regulator IC-317 and 337

- To measure line regulation
- To measure load regulation
- Application as adjustable regulator with improved ripple rejection

##### Opto-coupler MCT2E

- Application as voltage translator

##### IC 723 voltage regulator

- To study the application as low and high voltage regulator
- Load and line regulation