

Ministry of high Education and Scientific Research
Middle Technical University
Electrical Engineering Technical College

Training package
in
Workshops
(Electronic circuit)

For
Students of first class
Department of Medical Instrumentation Techniques Engineering



By

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Electronic circuits

13th & 14th

**modular
modular
units**

1/ Overview

1 / A –Target population :-

For students of first class

Department of Medical Instrumentation Eng. Techniques

1 / B –Rationale :-

This unit introduces principles of electronic circuits in the workshop

1 / C –Central Idea :-

The major topics discussed in this unit are included in the following outline.

- **Using bread board and Vero board**
- **Building a Circuit on Breadboard**
- **Building a Circuit on Vero board**

2/ Performance Objectives :-

After studying the first modular unit, the student will be able to-

1. Using bread board and Vero board
2. Building a Circuit on Breadboard
3. Building a Circuit on Vero board

3/ Pre test :-

Circle the correct answer:-

1. Do not require soldering or destruction to tracks and are hence reusable

a- Bread board

b- Vero board

c- all above

2. Require soldering or destruction to tracks and are hence reusable

a- Vero board

b- breadboard

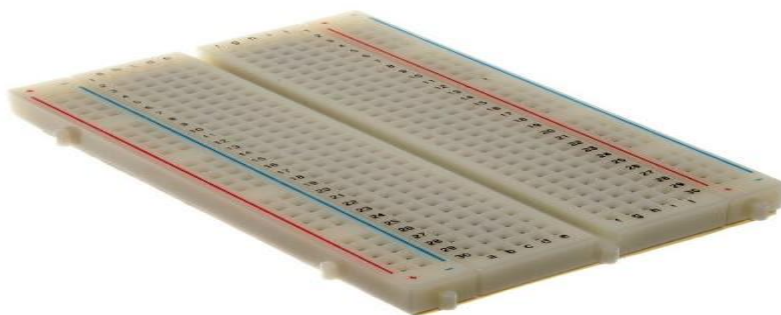
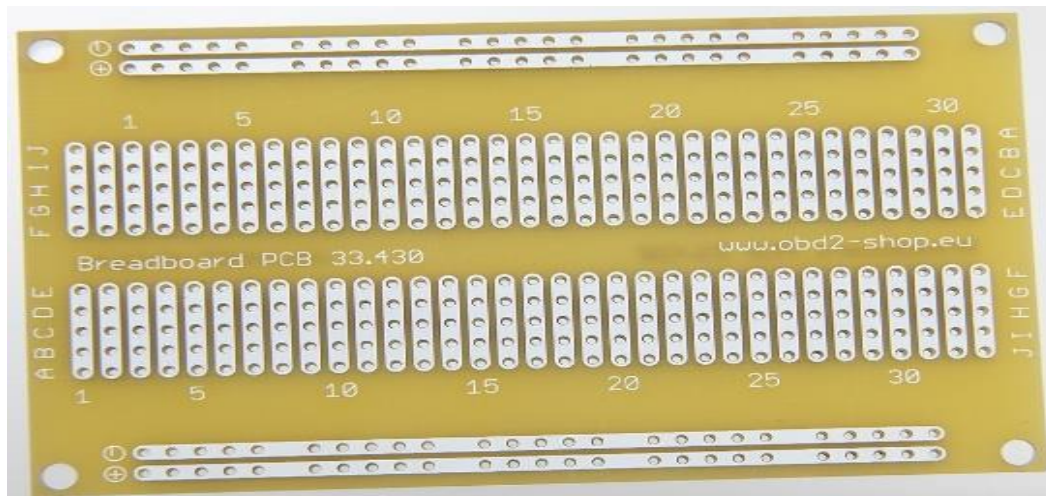
c- All above

4/ the text :-

➤ Electronic components

1- What is the difference between Vero board and breadboard?

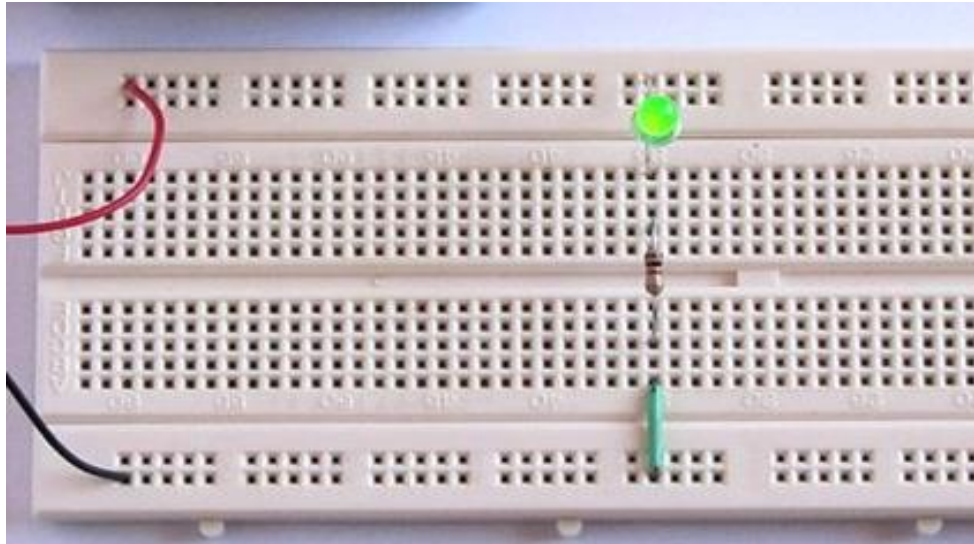
A breadboard, solderless breadboard, protoboard, or terminal array board is a construction base used to build semi-permanent prototypes of electronic circuits. Unlike stripboard (Vero board), breadboards do not require soldering or destruction to tracks and are hence reusable. For this reason, breadboards are also popular with students and in technological education.



✚ Building a Circuit on Breadboard

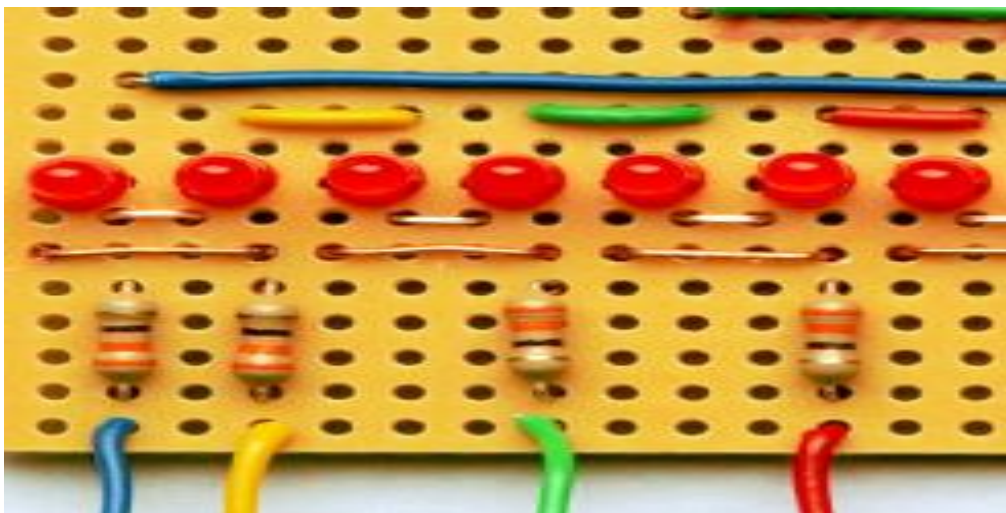
The cct consists of led, resistance, and breadboard

Connect the circuit as shown in figure below



✚ Building a Circuit on Vero board

The cct consists of led, resistance, and Vero board



5/ Post test :-

Circle the correct answer:-

1- Used to regulate voltage

- a- Voltage regulator
- b- transistor
- c- diode
- d- all above

2- The bipolar transistor has two types:

- a- True.
- b- False.

3- The types of transistor are

- a- NPN
- b- PNP
- c- PPN
- d- NNP
- e- a and b

6/ key answer :-

1- Pre test :-

1. a
2. a

2- Post test :-

1. a
2. a
3. e

7/References :-

1. Encyclopedia of Electronic Components Volume 1 (Charles Platt).
2. <https://www.electricaltechnology.org/2013/03/how-to-remember-direction-of-pnp-and.html>