K. J. Somaiya College of Engineering, Mumbai-77
(Autonomous College Affiliated to University of Mumbai)
Department of Electronics Engineering

Name: Chandana Ramesh Galgali
Batch: P3-3 Roll No.: 16010422234
~~Experiment~~ / assignment / ~~tutorial~~ No. 2
Grade: AA / AB / BB / BC / CC / CD /DD

Signature of the Staff In-charge with date

PCB Workshop (2022-2023)
Design and Manufacturing of Printed Circuit Board (PCB)

Post Lab Subjective/Objective type Questions

1. **Explain PCB in detail.**

Ans: A printed circuit board is a solid framework that houses electrical circuitry composed of embedded metal surfaces known as traces and larger metal sections known as planes. Components are soldered to metal pads on the board, which are linked to the board circuitry. This permits components to be linked together.

2. **List the software used for PCB layout design and explain how to design layout using EAGLE PCB Design software.**

Ans: Some of the softwares used for PCB designing are:
1.PADS
2.EAGLE(Easily Applicable Graphical Layout Editor)
3.ORCAD
4.KIcad
5.EasyEda

The design process of a PCB in EAGLE software is done by these steps:
1.Opening the Schematic view
2. Design the circuit by adding the required components using the ‘add part’ feature.
3.Checking for any errors in Electrical Rule check.
4.Switch to layout window and move parts to the grid by dragging each

component in the circuit.
5.Route each connection using the route icon.
6.Export your PCB layout.

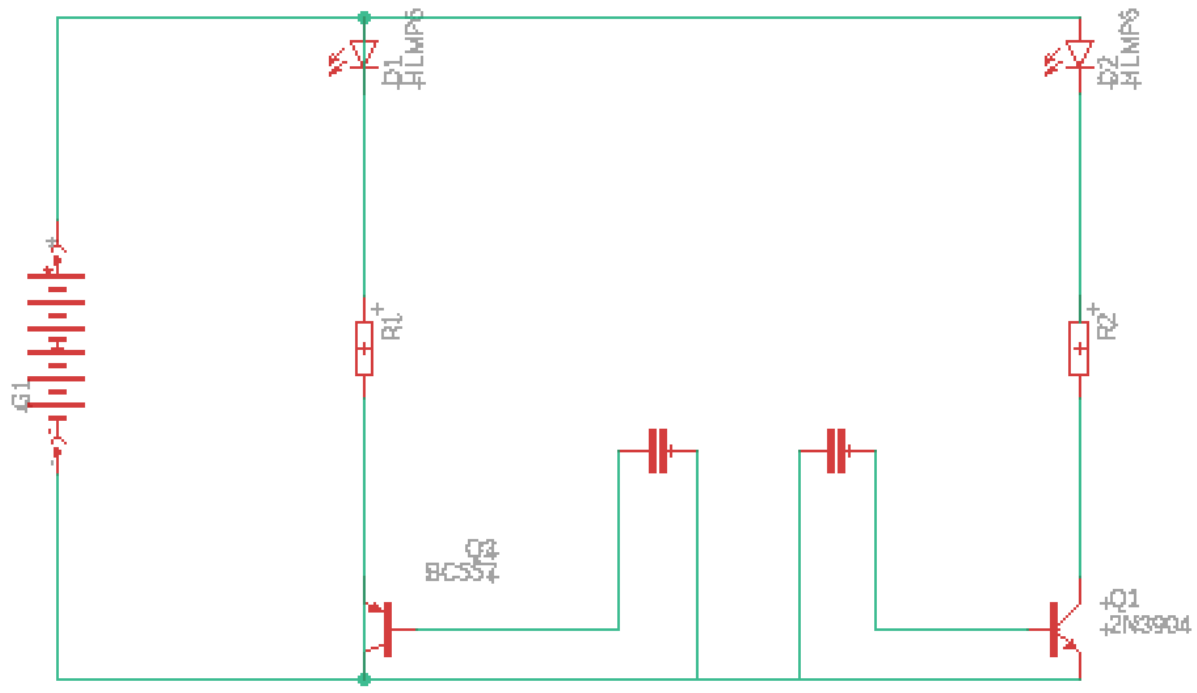
3. **Write and explain the PCB Fabrication process in short.**

Ans: The PCB fabrication process involves:
1.Transfer of the intended layout on copper-clad laminates
2.To show traces and pads
3.Etching or removing extra copper from inner layers
4.By laminating (heating and pressing) board materials at high temperatures, the PCB layer stack up is produced
5.Drilling holes for vias, through-hole pins, and mounting holes
6.Planting pin holes for plating.
7.Adding a protective coating to the solder masking or surface

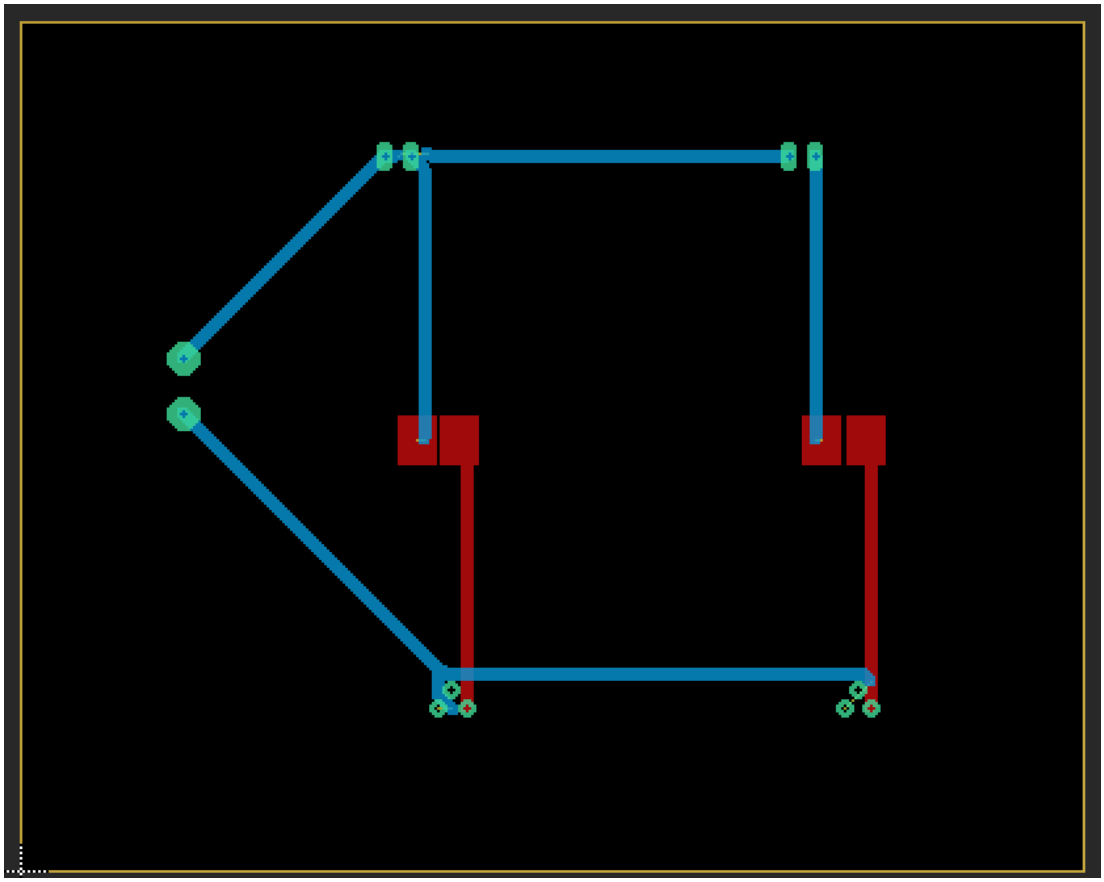
4. **Draw schematic diagram and its PCB layout of any electronics circuit.**

Ans:

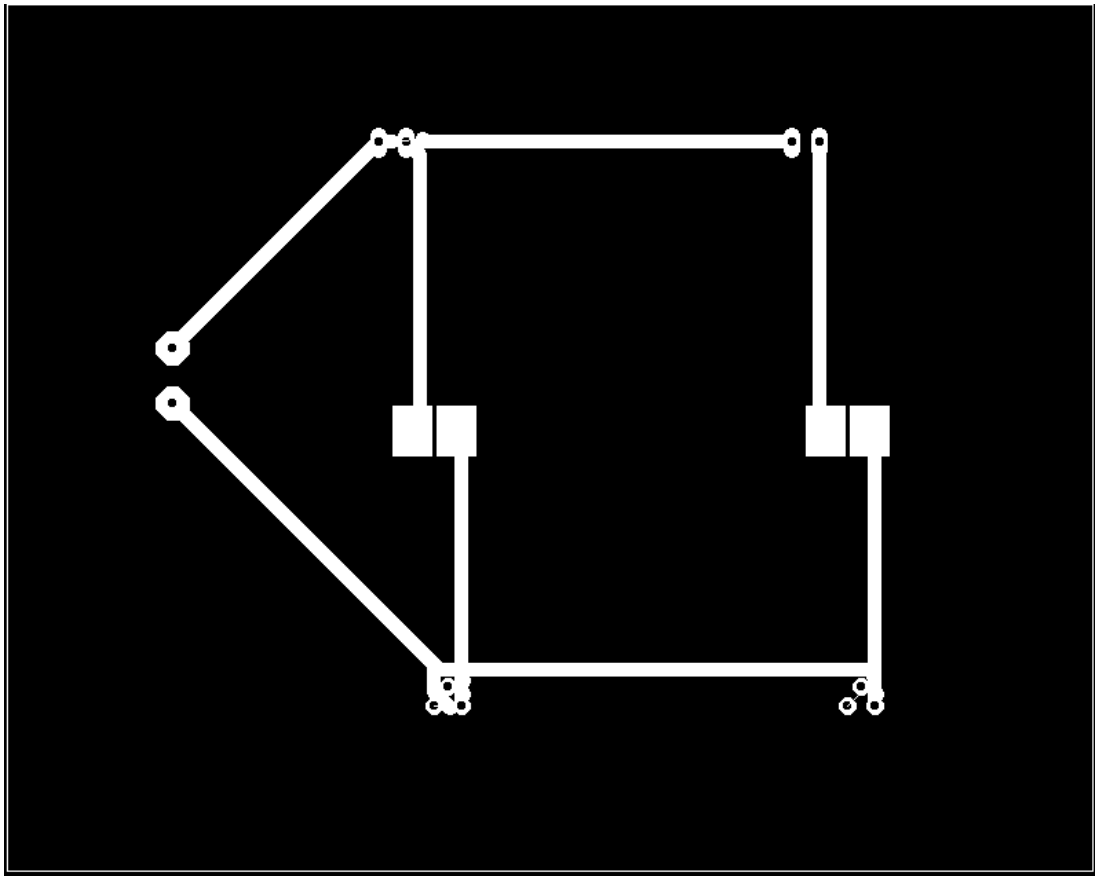
Schematic diagram-



PCB layout-



PCB layout(monochromatic)-



5. **Describe the function of the double sided UV Exposure unit.**

Ans: A double-sided UV exposure unit is a crucial piece of equipment for the manufacturing of components like double-sided PCBs. A photographic negative or positive is often in touch with the coated laminate during exposure. Since photoresist is sensitive to UV rays, exposure can be accomplished with a double-sided UV exposure unit that uses ultraviolet tubes.