

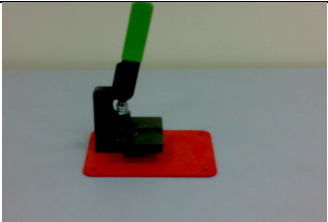
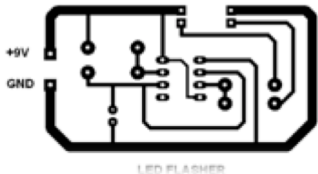
Electrical Workshop

Grade 10 – Worksheet Module 5 and 6

Name:
Duration: 1 hour (60 min)

Grade:10
Section:

Q1. Match column A with column B. Write the corresponding number in the space provided.

Column A	
1.	
2.	
3.	
4.	

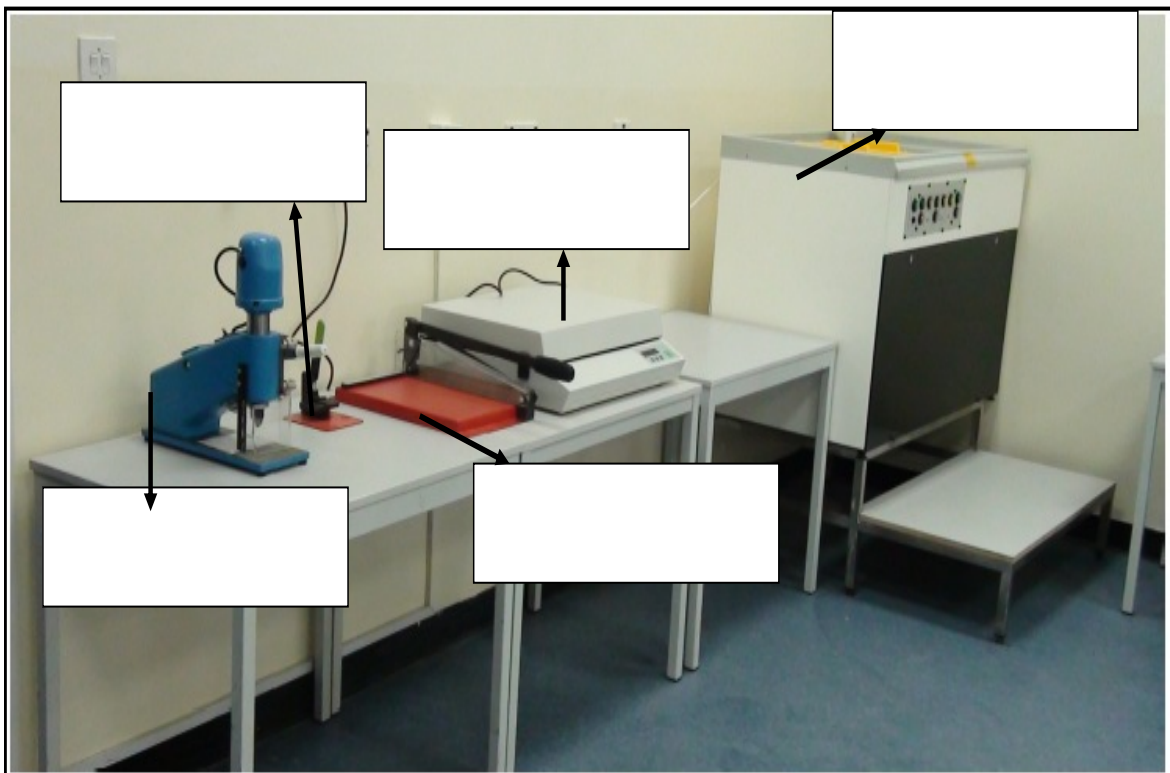
Column B	
	UV Exposure Unit
	Mega PCB Lab Station
	PCB ARTWORK
	Edge Rounder

Q2. Fill in the blanks by correct choosing:-

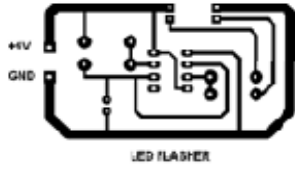
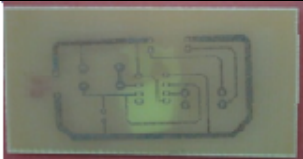
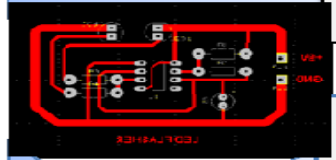
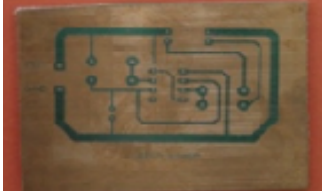
(Etching, Tinning, Drilling, Developing & Rinsing, Edge Rounder)

1. -----is used to produce the copper.
2. -----In this process the copper is removed from the non-track areas of the board.
3. -----In this stage, holes are made for mounting components.
4. ----- is used to round the edges of the PCB.

Q3:-label the picture parts below. write the device name in the boxes provided.



Q4:- Write the corresponding number in the space provided.

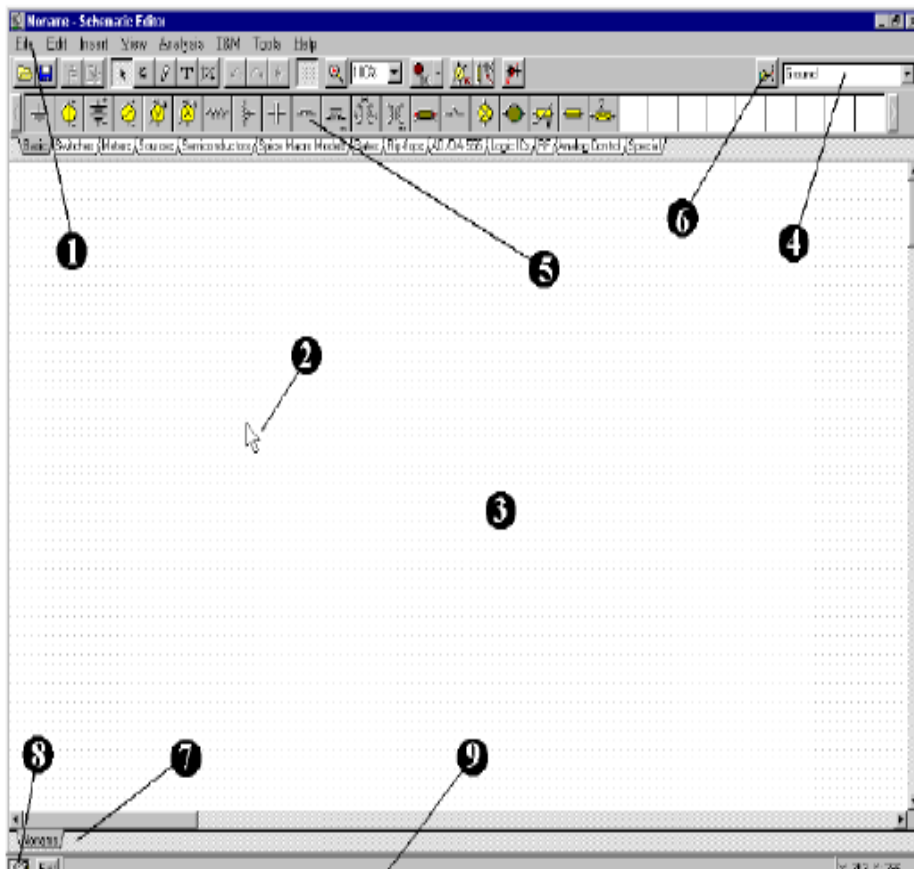
1	
2	
3	
4	
5	
6	

	The circuit is prepared on Tina and the artwork is printed on a transparent paper
	The artwork is aligned with the copper clad board and placed in the UV exposure unit for approximately 2 minutes
	1 mm holes are drilled to mount the components.
	The PCB is immersed in etching solution to remove the copper from non-track areas
	The PCB is immersed in a developing solution and the unwanted etch resist ink is brushed away
	Tinning is used to protect copper tracks from humidity

Q5:-State the basic functions of PCB (printed circuit board)

- 1.)..... 2.).....
 3.)..... 4.).....
 5.)..... 6.).....

Q6:- Label the picture parts below. Give the answer in the table provided.



A-Component Bar
B- Tool Bar
C- Menu Bar
D- Help line
E- Find Component Tool
F-Tina Task bar
G- Pointer
H- Schematic Window
I- Open Files tab

Number	1	2	3	4	5	6	7	8	9
Corresponding letter									

Q7:-Match each picture with its name. Write the corresponding number in the space provided.

1.	Soldering iron
2.	Solder wire
3.	De-soldering pump
4.	Soldering iron stand
5.	Clamps
6.	Magnifying Glass
7.	Wet sponge

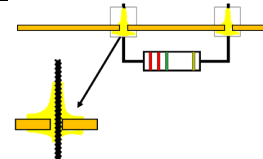
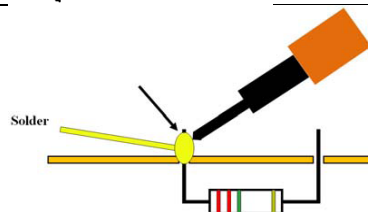
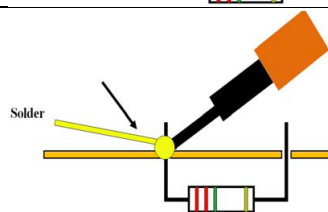
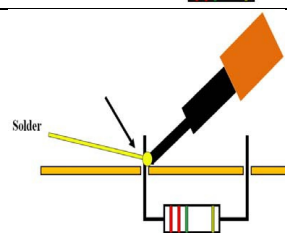
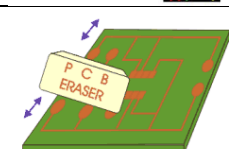
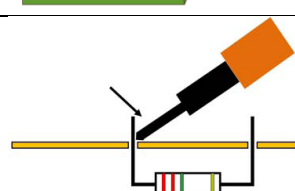
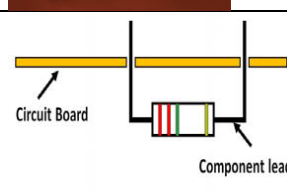
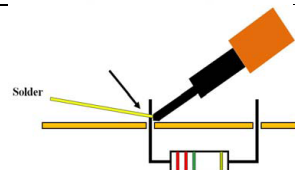
	
	
	
	
	
	
	

Q8:-Match each item in the following table with its function. Write the corresponding number in the space provided.

1.	Soldering iron provides heat to melt solder	
2.	Solder wire is an alloy made up of tin and lead. It is used to join components' lead to the board	
3.	Sucks the melted solder out of the joint	
4.	Soldering iron stand is a heat resistant stand for the soldering iron.	
5.	Clamps are used to hold the PCB for support while soldering.	
6.	Magnifying Glass helps to see tiny components leads and investigate soldering joints.	
7.	Wet sponge cleans the soldering tip from the solder	

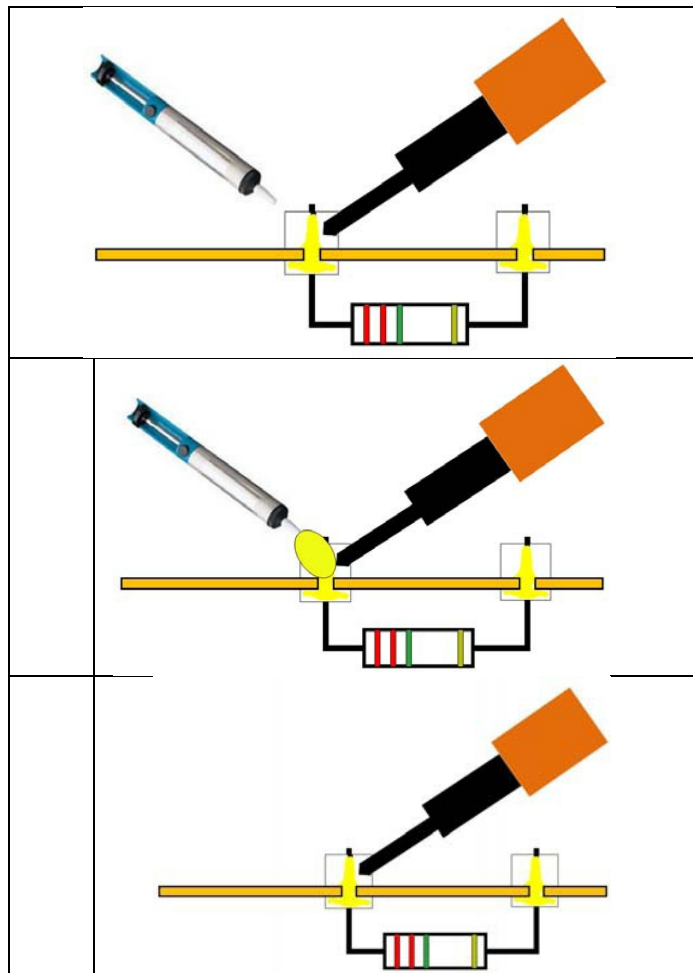
Q9:-Match each soldering step with its picture. Write the corresponding number in the space provided.

1.	Clean your PCB using PCB eraser
2.	Clean the soldering tip with a wet sponge to remove dirt and oxide
3.	Place the component to be soldered in position on the board. Verify that the component is positioned correctly before soldering.
4.	Move soldering iron until tip is touching wire
5.	Move solder wire to touch edge of the solder
6.	Hold the soldering iron until solder melts on tip
7.	Move solder in to form a small pocket
8.	Move soldering iron tip up. This will drag solder up with it.
9.	Look for shiny fillets

Q10:-Rearrange the following de-soldering steps. Write the corresponding number in the space provided.

	Release the spring to suck up the solder
	Melt the solder with your iron
	Quickly position the solder sucker over the melted solder



Q11:- Compare between soldering and de-soldering by completing the following table:

	Soldering	De-soldering
Definition		
Functions	1. 2.	1. 2. 3.
Required tools	1. 2. 3.	1. 2. 3.

Done by: Khaled Naser Ahmed.
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