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Name _____

Class _____ Section _____ Roll No. _____ Year _____

Subject _____

Sl. No.	Experiment Description	Experiment Date	Submission Date	Remarks Signature
	NAME-Rajasree Laha			
	ROLL - CSE214002	SEC-B		
	DEPARTMENT - Computer	Science	And Engineering	
	COURSE CODE - ECEUGFS02			
	COURSE TITLE - Basic Electronics Engineering			Lab
	YEAR - 1st SEMESTER -	1st		

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2.	Familiarization with measuring equipment like CRO, signal generator.	24.12.21	8-23
3.	Study of V-I Characteristics of P-N junction diode	31.12.21	24-27

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EXPERIMENT NO. 1

Registers – Registers are a type of computer memory used to quickly accept, store, and transfer data and instructions that are being used immediately by the CPU. A Processor register may hold an instruction, a storage address, or any data (such as bit sequence or individual characters). Resisters are passive electronic components.

Capacitor – A capacitor is a device that stores electrical energy in an electric field. It is a passive electronic component with two terminals. most capacitors contain at least two electrical conductors often in the form of metallic plates or surfaces separated by a dielectric medium.

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• POTENTIOMETERS:

Potentiometers are variable resistors. They normally have their value marked with the maximum value in ohms. Smaller trimpots may use a 3-digit code where the first 2 digits are significant, and the 3rd is the multiplier (basically the number of 0's after the first 2 digits). For example code 104= 10 followed by four 0's = 100000 ohms = 100K ohms. They may also have a letter code on them indicating the taper (which is how resistance changes in relation to how far the potentiometer is turned). They are typically marked with an "VR" on a circuit board.

• TRANSFORMERS:

A transformer is a static electrical device that transfer energy by inductive coupling between its winding circuits. A varying current in the primary winding creats a varying magnetic flux in the transformer's core and thus a varying magnetic flux through the secondary winding. Transformers are normally petty easy to identify by sight,

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and many have their specs printed on them. They are typically marked with an "I" on a circuit board.

- Inductors:

Inductors, also called coils, can be a bit harder to figure out their values. If they are color coded, the resources listed for resistors can help, otherwise a good meter that can measure inductance will be needed. They are typically marked with an "L" on a circuit board. It is a passive electronic component.

- DIODES: In electronics, a diode is a two-terminal electronic component with asymmetric conductance, it has low (ideally zero) resistance to current flow in one direction and high (ideally infinite) resistance in the other. Semiconductors, such as Diodes. They are active electronic components.

• TRANSISTORS:

A transistor is a semiconductor device used to amplify and switch electronic signals and electrical power. A voltage or current applied to one pair of the transistors' terminals changes the current through another pair of terminals. Because the controlled (output) power can be higher than the controlling (input) power, a transistor can amplify a signal. Today, some transistors are packaged individually, but many more are found embedded in integrated circuits. Transistors (typically marked with an 'Q' on a circuit board). They are active electronic components.

• INTEGRATED CIRCUITS:

An integrated circuit or monolithic integrated circuit is a set of electronic circuits on one small plate of semiconductor meterial, normally silicon. Integrated circuits are used in virtually all electronic equipment today and have revolutionized the world of electronics.

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Computers, mobile phones, and other digital home appliances are now inextricable parts of the structure of modern societies, made possible by the low cost of producing integrated circuits. Integrated circuits (typically marked with an 'C' or 'IC' on a circuit board).

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• A1. Determining resistor values

Resistance	Color code				Nominal	Upper	Lower	Actual
	Resistance value (N)				value	limit	limit	resistance measured
Sample type and wattage	1st Band	2nd Band	3rd Band	Tolerance T 4th Band	N	N+(N×T%)	N−(N×T%)	in Dmm
						$(10^5+$	$(10^5-$	
① Small resistor	Brown	Black	Yellow	Gold	$10\times10^4\Omega$ $=100K\Omega$	$10^5\times5\%\Omega$ $=(10^2+5)K\Omega$ $=105K\Omega$	$10^5\times5\%\Omega$ $=(10^2-5)K\Omega$ $=95K\Omega$	99.5kΩ
② Big resistor	Brown	Black	Green	Silver	$10\times10^5\Omega$ $=1M\Omega$	$(1+1\times10\%)$ $=1.1M\Omega$	$(1-1\times10\%)$ $=0.9M\Omega$	1.08 MΩ

• A2. Determining capacitor values

Sl No.	Capacitor sample type	coded value(μF)	voltage rating (V)	Actual capacitance measured on Dmm (μF)
①	Ceramic capacitor (104)	0.1	N/A	N/A
②	capacitor	22	40	N/A

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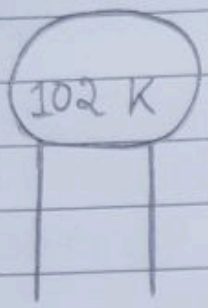

102 K = 1,000 pF @ 10%

- 1st Significant Digit
- 2nd significant Digit
- multiplier
- Tolerance

code	Tolerance
C	±0.25pF
J	±5%.
K	±10%.
M	±20%.
D	±0.5pF
Z	80% - 20%.