



SWAMI VIVEKANAND COLLEGE OF ENGINEERING INDORE

CLASS WORK

SESSIONAL WORK

ASSIGNMENT

EXPERIMENT

No - 1

SUBMITTED ON MARKS OR GRADE OBTAINED

NAME KRISH SONI ROLL NO

CLASS C.S.- II DEPARTMENT COMPUTER SCIENCE

SUBJECT Engineering Physics CODE NO BT-201

Krish
Signature of Student

Signature of Professor

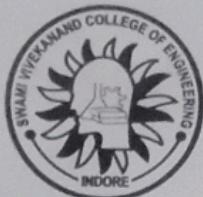
Object : To Plot the v-I characteristics of an LED

Apparatus Required : LED Kit, Patch chords

Theory : A Light-emitting diode (LED) is a semiconductor light source. LEDs are used as indicator lamps in many devices and are increasingly used for other lighting.

Introduced as a practical electronic component in 1962, early LEDs emitted low intensity red light but modern version are available across the visible, ultraviolet and infrared wavelengths, with very high brightness.

When a light-emitting diode is forward-biased (switched on), electrons are able to recombine with electron holes within the



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device, releasing energy in the form of photons. This effect is called electroluminescence and the color of light (corresponding to the energy of the photon) is determined by the energy gap of the semiconductor. LEDs are often small in area (less than 1mm^2), and integrated optical components may be used to shape its radiation pattern. LEDs present many advantages over incandescent light sources including lower energy consumption, longer lifetime, improved physical robustness, smaller size, and faster switching.

Procedure :- ① Do the Connections as per circuit diagram.

- ② Adjust the voltage with potentiometer at 0 volt and note the current if any.
- ③ Increase the supply voltage in steps and the corresponding current each time. LED will glow at approximately 1.5 volt.
- ④ Draw the curve between forward voltage and current.



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⇒ Circuit Diagram :-

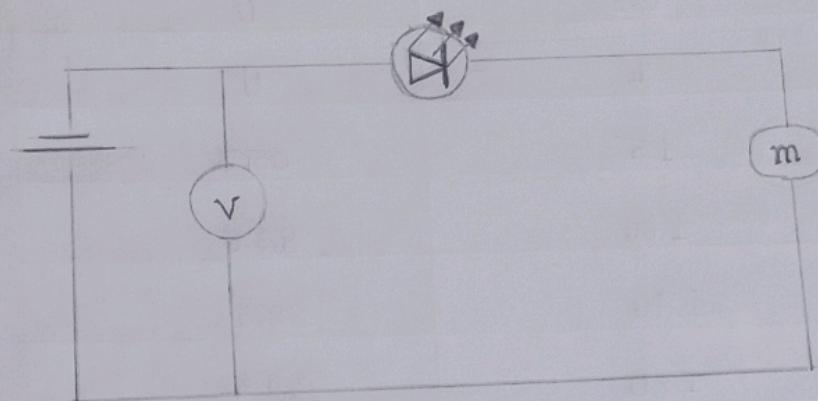


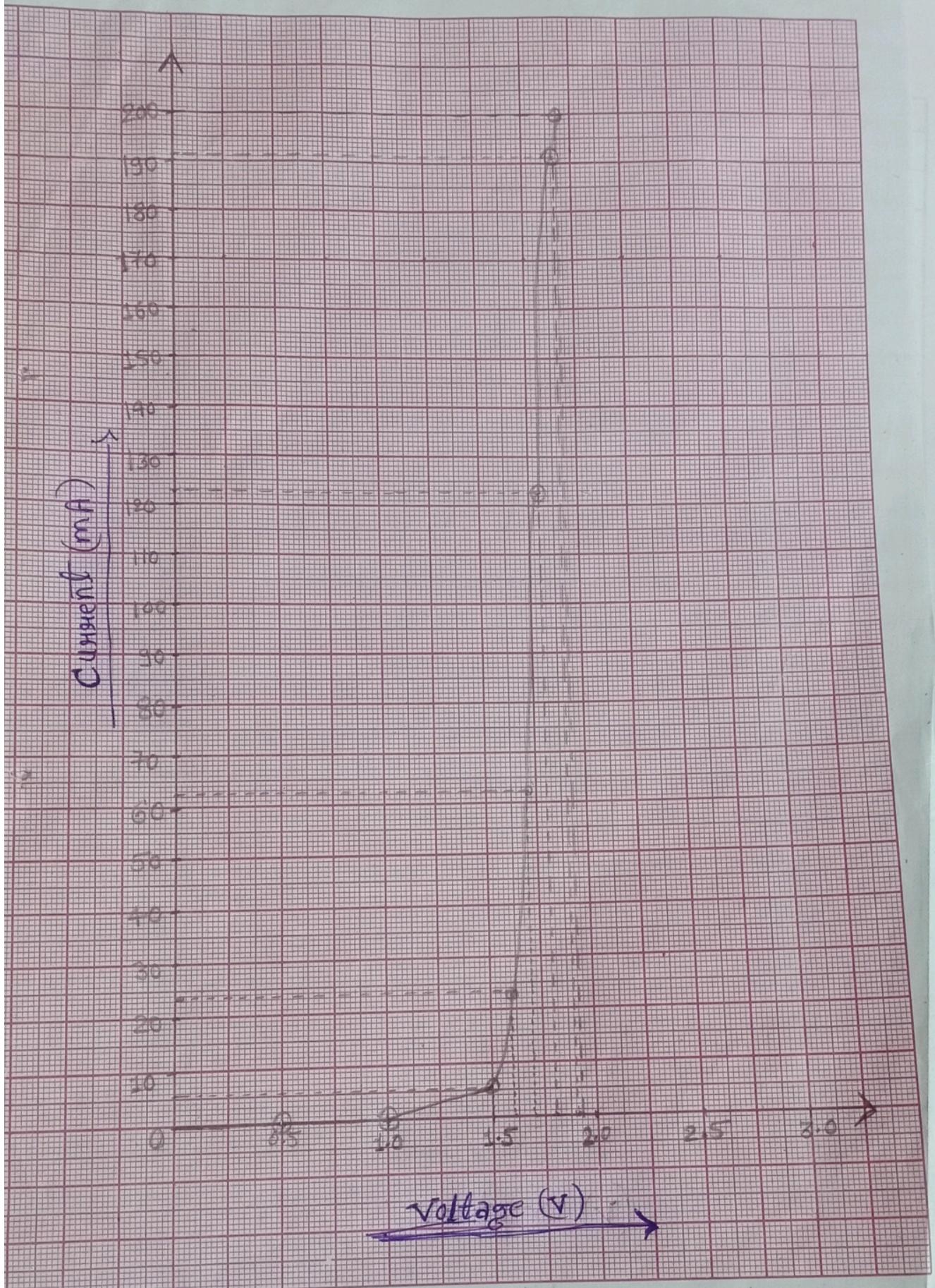
fig. 1.0 Circuit Diagram LED in forward biasing

Observation Table

Least count of ammeter (mA) =

Least count of voltmeter (v) =

S.NO.	Voltmeter (v)	Current (mA)
1.	0.5	0
2.	1	0
3.	1.5	65.3
4.	1.60	83.6
5.	1.70	62.3
6.	1.80	128.4
7.	1.91	191.1
8.	1.93	1A





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Result :- The curve is traced and glowing
Point of the LED is =
Volts and the maximum glowing point is =

Precautions :-

- ① LED must be connected in forward biased condition only
- ② Connection should be neat and tight
- ③ Increase voltage by small amounts
- ④ Do not cross the limit of the meter scale and take readings within the limit.