



FORWARD&REVERSE BIAS CHARACTERISTICS OF P-N JUNCTION DIODE

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ELECTRONIC COMPONENTS

- ACTIVE COMPONENTS
- PASSIVE COMPONENTS

ACTIVE COMPONENTS

- THE ELECTRONIC COMPONENTS WHICH ARE CAPABLE OF AMPLIFYING AND PROCESSING ON ELECTRICAL SIGNAL ARE CALLED ACTIVE COMPONENTS
- **EXAMPLES**
- TRANSISTORS
- LOGIC GATES

PASSIVE COMPONENT

- THE ELECTRONIC COMPONENTS WHICH ARE NOT CAPABLE OF AMPLIFYING OR PROCESSING AN ELECTRICAL SIGNAL ARE CALLED PASSIVE COMPONENTS.
- **EXAMPLES**
 - RESISTOR
 - CAPACITOR
 - INDUCTOR

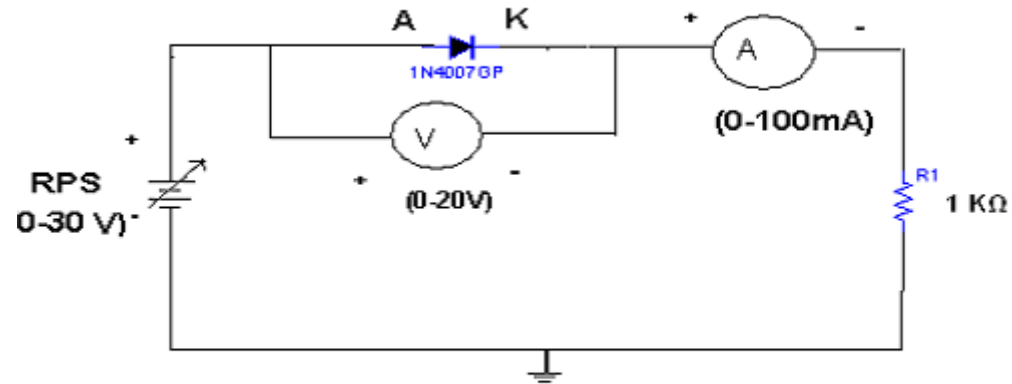
Forward & Reverse Bias Characteristics of PN Junction Diode

- **AIM:**-To observe and draw the Forward and Reverse bias V-I Characteristics of a P-N Junction diode.

- **APPARATUS:-**
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- P-N Diode IN4007.
- Regulated Power supply (0-30v)
- Resistor 1K Ω
- Ammeters (0-200 mA, 0-500mA)
- Voltmeter (0-20 V)
- Bread board
- Connecting wires

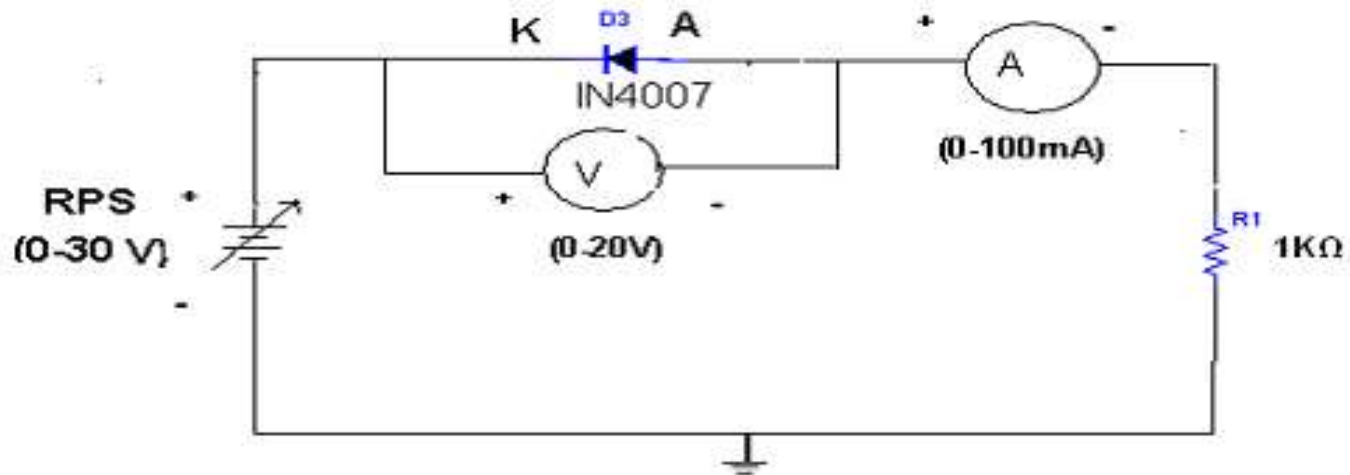
FORWARD BIAS

CIRCUIT DIAGRAM-
FORWARD BIAS:-



REVERSE BIAS

REVERSE BIAS:-



- **PROCEDURE:-**

- **FORWARD BIAS:-**

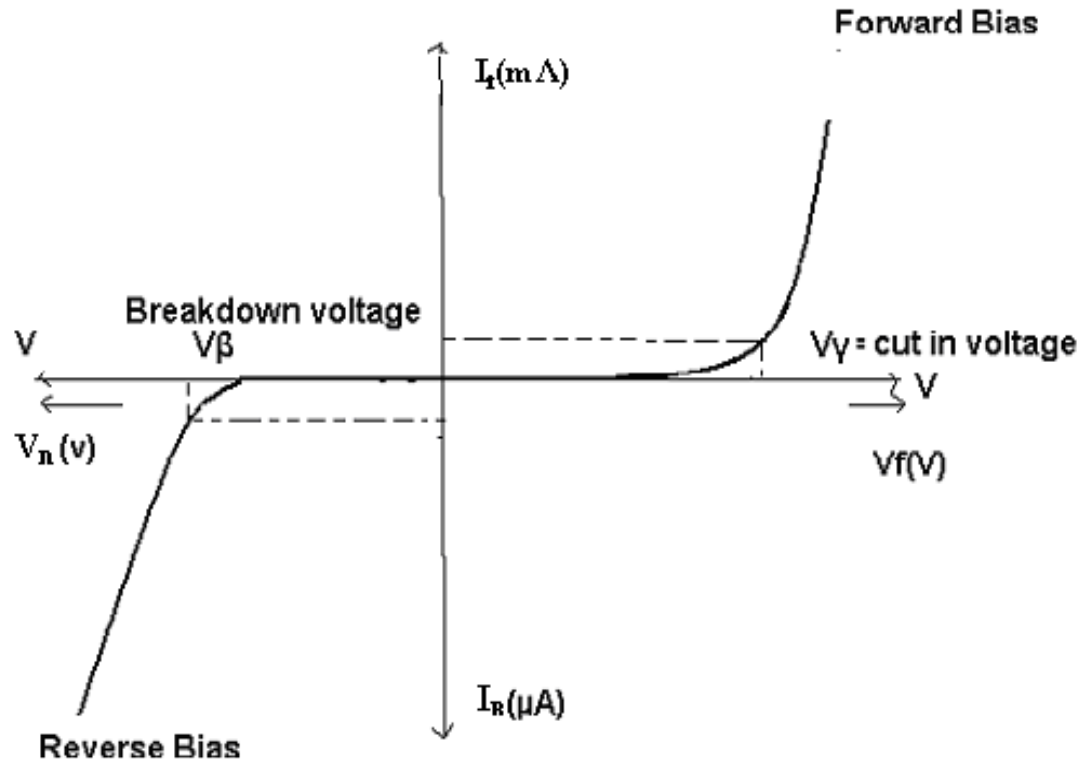
- 1. Connections are made as per the circuit diagram.
- 2. for forward bias, the RPS +ve is connected to the anode of the diode and RPS -ve is connected to the cathode of the diode,
- 3. Switch on the power supply and increases the input voltage (supply voltage) in Steps.
- 4. Note down the corresponding current flowing through the diode and voltage across the diode for each and every step of the input voltage.
- 5. The reading of voltage and current are tabulated.
- 6. Graph is plotted between voltage and current.

- **PROCEDURE:-**

- **REVERSE BIAS:-**

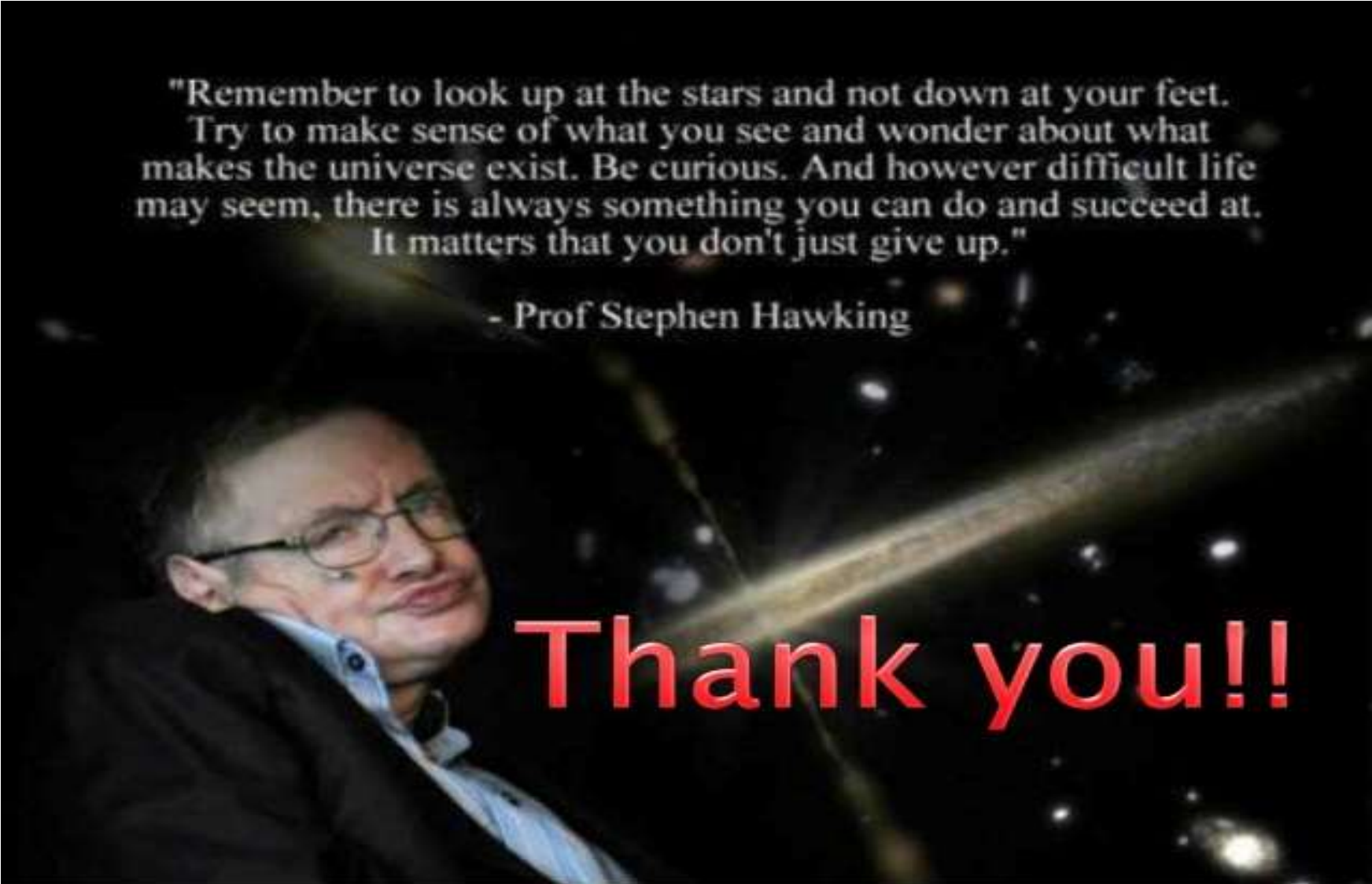
- 1. Connections are made as per the circuit diagram
- 2. For reverse bias, the RPS +ve is connected to the cathode of the diode and RPS -ve is connected to the anode of the diode.
- 3. Switch on the power supply and increase the input voltage (supply voltage) in Steps
- 4. Note down the corresponding current flowing through the diode voltage across the diode for each and every step of the input voltage.
- 5. The readings of voltage and current are tabulated
- 6. Graph is plotted between voltage and current.

MODEL GRAPH



- **PRECAUTIONS:-**

- 1. All the connections should be correct.
- 2. Parallax error should be avoided while taking the readings from the Analog meters.

A portrait of Stephen Hawking in a wheelchair, looking slightly to the right with a thoughtful expression. The background is a dark space filled with stars and a bright, glowing nebula or galaxy structure. The text is overlaid on the upper portion of the image.

"Remember to look up at the stars and not down at your feet.
Try to make sense of what you see and wonder about what
makes the universe exist. Be curious. And however difficult life
may seem, there is always something you can do and succeed at.
It matters that you don't just give up."

- Prof Stephen Hawking

Thank you!!