

EE143 Week 11: Suggest Pre-Lab Quiz Solution 2006/02/20 Shong Yin

(1) What is Metrics and what is it used for?

Integrated Characterization Software Package. It is used to control parametric test equipment to test devices.

(2) What is a HP-4145 and what can it measure?

It is a parametric analyzer used to stimulate devices with voltage or current and measure voltage or current response.

(3) How many terminals will be connected to the diodes, capacitors, MOSFETs? What are these terminals for the MOSFET (i.e. the common names)?

Diode & Capacitor: 2 terminal

MOSFET: 4 terminals: Body, Source, Drain, Gate

(4) What will we use to measure C-V? Is this tool available at all probe stations?

4284 LCR Meter. Available at only one probe station.

(5) How many circuits (not devices) are there on your test chip? What are they?

3: Inverter, NOR Gate, Ring Oscillator

(6) How can we sometimes measure a two terminal device with only one probe tip? (hint: these are often vertical devices)

Use the substrate as a contact.

(7) Give a brief description of a wafer probe station with schematic diagram.

Look for: Stage, 4 probes, Microscope