SURE TRUST G14 VLSI BACKENED ASSIGNEMENT [JAGAN N]

1.LIST out the semi conductor products and its corresponding companies:

Microprocessor :

- Intel, AMD, QUALCOMM, APPLE.

Graphical processing units:

- NVIDIA,AMD

Memory chips:

- DRAM, DDR.

Analog semiconductors:

- Texas intruments

Microcontrollers:

- Stm,atmega,Arduino.

Sensors:

Stm sensors, Arduino sensors.

2.latest laptop processors from AMD, INTEL, APPLE:

- AMD [AMD ryzen 9500Hx]
- Frequency:3.3ghz to 4.6gxz
- Size: 7nanometer technology used.

- INTEL [core i9 12900k]
- Frequency:3.2ghz to 3.8ghz
- Node:5nanometer technology

- Apple [m1 pro and m1 max]
- Cpu core 10-core, 16 core gpu
- Size:5nanometer technology

3.latest mobile laptop processor:

- Qualcomm[snapdragon 8th gecn 3]
- Frequency 3.2ghz to 3.30ghz
- Size:4nanometer technology

- Mediatek [dimensity 9300]
- Frequency 3.2ghz
- Size:3.2ghz

4.job roles available in VLSI

- VLSI design engineer
- Physical design engineer
- ASIC verification engineer
- FPGA verification engineer
- Layout engineer
- DFT engineer
- UVM verification engineer
- Fabrication team
- SOC architect engineer
- Testing engineer

5.why there is shift from BJT to MOSFET to FINFET..?

BJT is a current controlled device so it consume more current and there is no possibility to control more in it but MOSFET is voltage controlled device and it is having more speed while act as a switch circuit when compared to BJT so later we moved to MOSFET. And this MOSFET has a two dimensional architecture but as compared to FINFET it has a 3 dimensional architecture and design so it can prevent an leakage current from the transistors so we are moving towards to FINFET.

6.Evaluation of memory technology:

Memory

- Primary memory
- Secondary memory

Primary memory

- ROM
- RAM

RAM

- ❖ SRAM
- ❖ DRAM
- ❖ DRAM
- ❖ SDRAM
- ❖ RDRAM
- ❖ DDR SDRAM

DDR SDRAM

- ✓ DDR1
- ✓ DDR2
- ✓ DDR3
- ✓ DDR4
- ✓ DDR5