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MEVD - 201

M.E./M.Tech., II Semester

Examination, June 2014

VLSI Technology

Time : Three Hours

Maximum Marks : 70

Note : i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Describe a typical FEOL and BEOL wafer cleaning process.
b) Explain the major sources of contamination in a fabrication area.
2. a) Describe the principles and uses of rapid thermal, high-pressure and anodic oxidation.
b) Explain the kinetics of oxidation process.
3. a) Explain the reaction of negative and positive photo resists to light.
b) Explain the X-ray lithography with Basic patterning processes.
4. a) Explain the effect of surface current leakage on a junction performance characteristics.

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- b) Explain the difference between a deposition and a drive-in oxidation.
5. a) Describe the principle of chemical vapour deposition.
b) Explain an advantage of a horizontal vertical flow CVD reactor.
6. a) Explain plasma-enhanced CVD (PECVD) with suitable example.
b) Compare the advantages and disadvantages of diffusion and ion implant processes.
7. a) Why low-K dielectrics used with copper metallization systems.
b) Describe the role and movement of oxygen during thermal oxidation.
8. Write short notes on:
 - a) Wafer sort
 - b) Electron beam exposure system
 - c) Implant damage
 - d) Silicon on Insulator.

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