

5. Mention a few methods by which one can deposit thin films on to silicon wafers.

6. A certain silicon-gate NMOS transistor occupies an area of $25 \lambda^2$ where λ is the minimum lithographic feature size. Find how many MOS transistors can fit on a $5 \text{ mm} \times 5 \text{ mm}$ die if (a) $\lambda = 10 \mu\text{m}$ and (b) $\lambda = 1 \mu\text{m}$?

7. A simple p-n junction diode is shown in cross section in the figure below. Make a possible process flowchart for the fabrication of this structure. Include mask steps.

