Quiz 1 FYS4310

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1. I'm really looking forward to take this test.

2. FYS4310

12. MOS = metal-oxide semiconductor
CVD = chemical vapor deposition
MBE = Molecular Beam Epitaxy
LPCVD = Low pressure chemical vapor deposition
ALE = Atomic Layer Epitaxy
SLS =

19. Single crystal Silicon, Graphene (when two-layered, meaning two Graphene-layers stacked on each other), Indium Arsenide doped with Zn, Gallium phosphide, Zinc selenide (ZnO is an often used semiconductor as ZnO, so assuming that Zinc Selenide is a semiconductor as well).

6. n-type

20. No A og or B region is suggested in figure.

7. The area density of charges in the oxide

8. Gas-transport since mass-transport is the rate-limited mechanism at high

temperature.

9. I must admit that I could not remember Henry's law, so had to look at the web. The law is: At a constant temperature, the amount of a given gas that dissolves in a given type and volume of liquid is directly proportional to the partial pressure of that gas in equilibrium with that liquid.

10. - AlAs is grown in a different growth chamber than where GaAs is grown. They need two different Knudsen effusion cells, based on that interpretation.
- MBE is presently the only technique used for growing Mo doped GaAs. At least at UTN I believe.

11. Water

5. (Answer A (could not write it all down due to time constraints)

3. $[SiCl_2H_2]^{1/2}$

4. None of them

14. k

18. An As layer

17. A AlAs (111) surface

16 B: True
J: True
E: True
H: True: E- mobility 1350 cm^2/Vs, hole - mobility: 430 cm^2/Vs

15. It explains why float-zone technique yields less oxygen.