13/11/17

F 3317 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

Seventh Semester

Branch : Applied Electronics and Instrumentation Engineering

AI 010 701—VLSI (AI)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*
Each question carries 3 *marks.*

1. Compare wet etching to dry etching ?
2. List out the design rule for vtas ?
3. Write a note on IC crossovers ?
4. What are the advantages of CMOS technology compared to conventional MOS technology ?
5. Discuss the features of GaAs technology.

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*
Each question carries 5 *marks.*

6. Explain Fick's law of diffusion.
7. Write a note on Floor planning in ICs ?
8. Write a note on monolithic capacitors.
9. Discuss the advantages of SI gate technology.
10. Write a note on the need for device modelling ?

(5 × 5 = 25 marks)

Part C

Answer **all** *questions.*
Each question carries 12 *marks.*

11. Explain MBE process. Compare it with a CVD grown epitaxial layer.

Or

12. Explain the different protection techniques in lithography ?

Turn over

13. Discuss the different approaches to sealing and their impact on the performance of transistors.

Or

14. Discuss and compare the different design styles in VLSI.

15. Explain the steps in the fabrication of a monolithic diode.

Or

16. Explain the different isolation techniques used in ICS ?

17. Explain in detail on N-Well CMOS process.

Or

18. (a) Write a note on latch up in CMOS ? (6 marks)

(b) Write a note on MOS resistors. (6 marks)

19. Explain the different steps in MESFET fabrication.

Or

20. (a) Explain the features of GaAs technology. (5 marks)

(b) Explain the doping process in GaAs. (7 marks)

[5 × 12 = 60 marks]