
*Answer any FIVE Questions
All Questions Carry Equal Marks*

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| 1. | a | Discuss the soft errors failures in DRAM. | 6M |
| | b | Compare 4MB and 16MB SRAM, advanced SRAM architectures and their designs | 6M |
| 2. | a | Explain the architecture of a 256K CMOS flash memory. | 6M |
| | b | Explain about high density (multi MB) ROMs | 6M |
| 3. | a | Explain the following | 6M |
| | (i) | stuck –at fault | |
| | (ii) | Bridging fault | |
| | (iii) | Coupling faults | |
| | b | Write about pseudo Random testing of a RAM. | 6M |
| 4. | a | Explain various radiation hardening design issues. | 6M |
| | b | Explain about single event phenomenon with respect to radiation effects. | 6M |
| 5. | a | Explain the FRAM cell and its memory operation. | 6M |
| | b | Write short notes on | 6M |
| | (i) | flash memory cards | |
| | (ii) | CMOS SRAM card. | |
| 6. | a | Discuss about TRENCH and stacked capacitor cells inn DRAM. | 6M |
| | b | Discuss about non volatile memory radiation characteristics. | 6M |
| 7. | a | Explain about wafer radiation testing and test structures. | 6M |
| | b | Write a short notes on 3D memory stacks and MCMs. | 6M |
| 8. | a | Explain about floating gate EPROM cell with a neat sketch. | 6M |
| | b | Briefly explain about BIST techniques for memory. | 6M |