Exam.Code:0976
Sub. Code: 7431

2072

M. Tech. (Microelectronics)

Second Semester

MIC-204: Advanced Memory Technology and Design

Time allowed: 3 Hours

Max. Marks: 50

***NOTE:*** *Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Section.*

*x-x-x*

1. a) Write note on Hot-electron Injection. (5x2)
   b) What are Design Approaches in memory chip design?
   c) Explain Redundancy techniques.
   d) Explain the On-chip testing Scheme.
   e) Explain the operation of DRAM cell.

## Section A

2. a) Explain the basic operation of 1-T cell. (5)
   b) Explain the basic functioning of flash memory cells with diagram. (5)
3. Draw and explain all the composition of basic memory circuit. (10)
4. Describe the role of $V_{BB}$ generator and reasons why its needed. (10)

## Section B

5.a). Explain the basic chip configuration and operation of DRAM chip with diagram. (5)

b). What is Address Multiplexing and its basic operation. (5)

6. Explain the following with diagram:

   a). The address buffer

   b). Multi-divided data line

   c). Refresh-Relevant Circuits. (3+3+4)

7. Explain the Standard DRAM with block diagram and also explain its read-write cycle. (10)

*x-x-x*