

UNIT V
MEMORY AND PROGRAMMABLE LOGIC
Part A – 2 Marks

1. List basic types of programmable logic devices.

- . Read only memory
- . Programmable logic Array
- . Programmable Array Logic

2 Explain ROM

A read only memory (ROM) is a device that includes both the decoder and the OR gates within a single IC package. It consists of n input lines and m output lines. Each bit combination of the input variables is called an address. Each bit combination that comes out of the output lines is called a word. The number of distinct addresses possible with n input variables is 2^n .

3. Define address and word

In a ROM, each bit combination of the input variable is called on address. Each bit combination that comes out of the output lines is called a word.

4. What is programmable logic array? How it differs from ROM?

In some cases the number of don't care conditions is excessive, it is more economical to use a second type of LSI component called a PLA. A PLA is similar to a ROM in concept; however it does not provide full decoding of the variables and does not generates all the minterms as in the ROM.

5.State the types of ROM

- x Masked ROM.
- x Programmable Read only Memory
- x Erasable Programmable Read only memory.
- x Electrically Erasable Programmable Read only Memory.

6. Define RAM.

A memory unit is a collection of storage cells together with associated circuits needed to transfer information in and out of the device. The time it takes to transfer information to or from any desired random location is always the same, hence the name random access memory.

7. Which memory is called volatile? Why?

Memory units that lose stored information when power is turned off are said to be volatile. It is called so because the data is not permanent, but volatile. E.g. RAM.

8. What is SRAM?

The static RAM consists of internal latches that store the binary information that remains valid as long as power is applied to the unit.

9. What are the advantages of RAM?

- i) Non-destructive read-out
- ii) Fast operating speed
- iii) Low power dissipation
- iv) Compatibility
- v) Economy

10. Differentiate ROM & PLD's

ROM	PLD's
1. It is a device that includes both the decoder and the OR gates within a single IC package	It is a device that includes both AND and OR gates within a single IC package.
ROM does not full decoding of the variables and does not generate all the minterms.	PLD's does not provide full decoding of the variable and does not generate all minterms.