

Unit 6 Assignment

ROX

Q.

Definition	Meaning
Micro-Processor	It's a chip that only contains the processor and doesn't contain any memory or I/O ports.
Micro-Controller	It's a chip that contains MPU and memory and I/O ports in a single chip and all of them are connected properly.
Embedded System	It is a single purpose system where we use sensors and actuators with MCU to achieve that purpose.
Mechatronic System	It is a system where mechanical parts are integrated with digital parts (electrical).
n-bit Processor	a Processor with data bus with width n .

Q2

Micro-Processor

Micro-Controller

General purpose

single purpose

only Processor

Processor with memory
and I/O portsGood for flexible system
as you can change the
chip size and it's more
expensive and bulkyGood for low cost and
space systems as it
is not flexible

Q3

Von-Neuman Arch.

Harvard Arch.

Same bus for both
Data and instructionsseparate buses for
data & instructions

used with Computers

used with MCU

Q₄ PROM

programmable once for every bit uses a fuse

EPROM

programmable and erasable using ultra violet

EEPROM

electrically erasable

Flash ROM

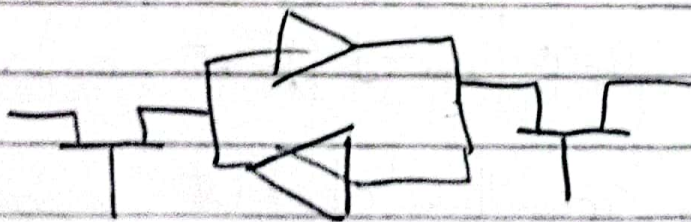
electrically erasable entirely only

Mask ROM

Programmed by manufacturer once only

Q₅ SRAM

DRAM



uses 6 transistors
no need for refreshing
more expensive

uses 1 transistor and 1 capacitor
needs refreshing
less expensive
larger sizes

Q6 Because processor doesn't have access to write on it and it is not easy to write on it So it is mainly used for reading

Q7

type	volatile	writable	Erase size	max erase cycles	Speed	Cost per bit
SRAM	yes	yes	Byte	unlimited	Fast	Expensive
DRAM	yes	yes	Byte	unlimited	Moderate	Moderate
Masked ROM	NO	once	N/A	N/A	Fast	cheap
PROM	NO	yes	N/A	N/A	Fast	Moderate
EPROM	NO	yes	All	limited	Fast	Moderate
EEPROM	NO	yes	Byte	limited	Fast	Moderate
Flash	NO	yes	section	limited	Fast	Moderate
NVRAM	NO	yes	Byte	unlimited	Fast	Expensive