CA	CO	
- Hardware comp. connected together	- concerned with structure & behaviour	
- interface between hardware & software	- deals with components of connection	
- helps to understand functionalities	- helps to understand the units which are arranged & interconnected	1) Hexadecimal → Binary.
. programmer can view archit. in terms of: → instruc^n → addressing modes. → registers	- it expresses realization of comp.	2) Normalization.
	- need of archit. for organization	3) Biased 1) single precision $E' = E + 127$. 2) Double precision $E' = E + 1023$
- consider first for design		
- deals with high level design issues	- deals with low level design issues	
- involves logic	- involves physical components	NON-RESTORING METHOD

15/4

A	Q	m	count
00000	1111	00100	
00001	111 0̶	11011	1
11101	1110	11100	
1011	1101̶		2
1111	1100		3
1111	100 1̶		
00011	1001.		
00111 − 001 1̶			4
00011	0011		
	Q		$1 . N \times 2^{E}$ 1023

Computer	M.M
CPU / Processor	- storage
I/O Dev /channel	Bus /Bridge
w Sequential logic /cu m/m.	CU Register

CPU	ALU
CU (main) - does all processing	for arithmetic op^n
Registers (small unit) - Store small amount of data	CPU BUS CU R △ ALU

Evolution of computer

Mechanical era	Electronic era
-1623	Ist - vacuum tubes
-1642	1945-1958
-1673	IInd - Transistor
-1822	1958 - 1964
-1889	IIIrd - Integrated Chip
Tabulating Machine Company.	1964 -1974
	IV - Microprocessors

-1938 Z1

Intel History

- 4004 } μ bit   74
- 4040
- 8008 } 8 bit   α
- 8080
- 8085 }
- 80 86 } 20 bits
- 8088 }
- 80186 } 24 bits   6
- 80286 }
- 80386 } 32 bits   33
- 80486 }   50
- Pentium 1 } 64 bits   133
- Pentium 2 }   300
- Pentium 3 }   1.1
- Pentium 4 }   3.7
- Multicore   64 bits   3.7

Unsigned M 13×11

C	AC	Q	M	
0	0000	1101	1011	Initial
0	1011	1101	1011	Add
0	0101	1110	1011	Shift
0	0010	1111	1011	Shift
0	1101	1111	1011	Add
0	0110	1111	1011	Shift
1	0001	1111	1011	Add
0	1000	1111	1011	Shift

Ans: ACQ

Signed Multiplication / Booth's Algorithm n q 13×-11

AC	Q	Q-1	m	
00000	10101	0	01101	1
10011	10101	0		2
11001	11010	1		
00110	11010	1		3
00011	01101	0		
10110	01101	0		4
11011	00110	1		
01000	00110	1		5
00100	00011	0		
10111	0 0011	0		
11011	1 0001			

(11011 10001)

1 → A
0 → biased

Division of Integers : Restoring Method 18/5

AC	Q	M	
00000	01101	00101	AC = R
00001	1101 0̶		Q < Q
11011	11010		
00001	10 00̶		
0 - m	10100		
00001			
00011	01000̶		
	01000		
00011			
00011			
00110	100 0̶		
00001	10001		
00011	0 001 0̶		
1 10	00010		