(I)

	q	Scpt	TUTORIAL	-1	28		
					((0)		
1 , 1	N	UIACROIS (COMPUTER ORGANISATION) ((0)					
	30			3110	[comp. = complement]		
0.4	1.>	(d) 00101	4				
111		(d) 00101 11010 .1's	comp. 00	1011			
	3 1	(4)					
	2.}	(a) True	(2'5 (mp. = 1's	comp. + 1)		
		P. C. C. C. C. C.		1101	1000		
1	3.>	the Binary	Numbers (binary equiv	alent's of deamal number		
6) 14	4.>	(b) Booth 'c	Algorithm	7-2			
		A cip					
	5.>	do Multiplier	(acr	Aultiplicand) *	b (multiplier))		
	1.1	0 10		10110	600 0		
	6.) (A) 6 3 (O) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A						
	(-2) * (-3) Register size = 4 bits						
	$M = (-2)_{10} \xrightarrow{2's \text{ comp.}} (1110)$						
		1'5 1101					
		$\frac{1}{2^{2}} + \frac{1}{1110011} - M \rightarrow (2)_{10} \rightarrow (0010)_{10}$					
		0 0011					
		$\frac{1}{3}$ 11001100) $\frac{1}{3}$ (1101)					
		2'5 + 1101		1			
		(AC 333)	Q () -1	90-1	1 operation		
		VS.	00				
(305)	17.4	0000	110(1)	(0)	D AC = AC-M		
		G		500	0000		
I want	7.1	0010	1101	0	+ 0010		
600	67	12 3) ,	100 Sec. 11	(0010)2		
10	0	0001	0110	1 1	ii) ASR		
111		(locserved)	A Day		11000		
100	11 12 - 1						

	1	1		
AC		6 TUINOI	9-1	Operation
(2nd) + 000	1222/12/12/13	10 10 A HUAL	(Cold	142122014
				(i) AC = AC+ M
1111	1 0	110	1	0001
1>		, ,	1010	+ 1110
111	1		0	(1111)2
(A)			1	(ii) ASR
(324)				i) AC = AC - M
0001	, 10		0	
		201	mald promit	+ 0010
000	0 11	0(1)	(1)	X0001
		ndus	yla s disa	(11) ASR
4mshp	2d & 11 mi	411/1420 1		(i) ASR
1000	00 01	10]	1	CI) HSR
Ans	15 (00	00 0110)	= (6) (A) (A)
	Ald D.	25 E 3 4 1984	115-) x (0-)
7.) (c) -21	in the state of			H12 + =
(-+)10	x (3)	oegiskr Mbi	4 = (5)	
	11201 1	M → (-7) ₁₀	→ (11001)	
(F) 00	111			100
15 11	0000	OI(F) - M-	- (00111) 2
+	1			
2'3 (11	001)	0 + (3)10	- (00011)2
A	C	9 700	9-1000	Operation
Step@ 0	0000	00010	(0)	of a wild!)
1 21.82 t				(i) AC = AC-M
2/2/00/0	0111	00011	0	00000
1	>	7	0 100	1 00 11 1
0	0011	10000		(00111)

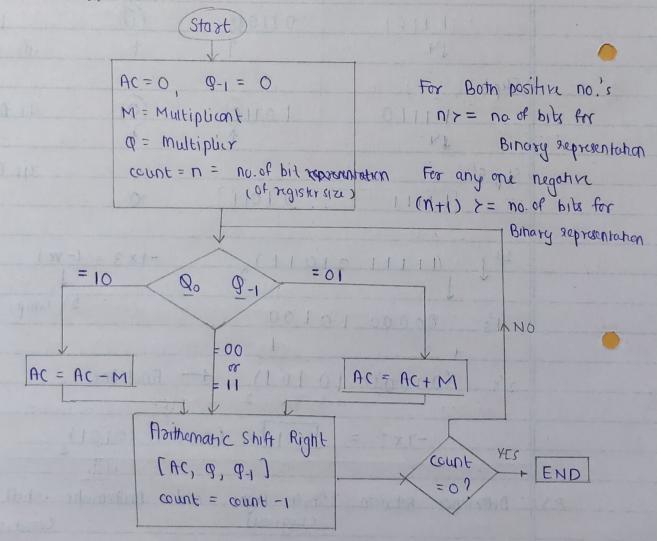
	AC AL	0	91	Operanon			
	Skp2:	2414 Epi		(i) ASR			
	0 0001	11006)	1	1002 To 1000			
		0					
	Step 3: O LO LE DE	T- 49514	Lora FES	the particular and			
	11010	11000		(i) AC = AC+M			
	1)	7		00001			
			112	t 11001			
	1 1101	01106		11010			
	1)	7	1	(ii) A.S.R.			
100	Skp4:	0 = 10	(3 = 3/1				
1 108	= 11110	10116	(0)	(1) ASR			
436	and In	1 Marit	1				
1	Stop 5: 11 ASR						
1 P 1	10 1111	0 1011	Ø				
	all processing transfer to						
	$2^{2}s$ (1) 11 1 0 10 1 1) $-7\times3 = (-ve)$						
	10= 2 2 0 01= 1						
	1's 00000 10100 2's comp.						
	$\frac{1}{2's} \frac{1}{(00000 0 0 0)} + \frac{1}{500000 0 0)} + \frac{1}{500000 0 0 0 }$ $\frac{1}{118 11 12} = \frac{1}{118 000000 0 0 0 }$						
41.7			AL	1			
8.5	Difference between	Shift Right one	d Anthemat	ic shift nght			
0.7	Difference between Shift Right and Anthomatic shift right (Logical) (most significant Bit)						
1 04	(A) Logical Shift Right: Shifting the bits to the right and MSB						
4	becomes 0.						
	Example Logi	cal shift nont	(h) 1011	0101			
A 7 24	The state of	(m >>	1) 0101	1010			
3011	17 may 1 2 , 23 24 30 224 (Q						
-							

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(B) Arithematic Right Shift: means shifting the bits to right and MSBC most significant Bit) is same as MSB of original number.

Eg: 10110101 \xrightarrow{MSB} 1 1011 010

9.> Booth's Flowchart



- go = last bit of 9 1 Intialise cond for AC, 9th, find, M, -M, P
 - Ac = Accumulator @ check cond 90 9-1 > 10 AC = AC-M Aowchart. 10 - AC = AC+M
- DASR of AC, Q, 9-1 & decrement count
 - (4) if count ==0 → End otherwise continue

Hada		1100	183	-1 11	4.1014	
10.>	(A) 1×5 $n = 4 = size of register$					
	= (35) M = b	inary of (7) 10	, =	(0111)2	0111	
					12 1000	
		(F-)				
	adaught a second	10		2	2's (1001)	
	AC	Q	1	9-1	Operation	
	(skpl)					
	0000	0100	10	0	(i) AC = AC- M	
		1			0000	
	1001	0101		0	+ 1001	
	1		010		(1001)	
	1100	1016)		0	Quin A.S.R.	
	100				CHI	
	Step 2:				(i) AC = AC+ M	
(4)		010	3101	1.	1100	
	1				+ 0111	
	10001	100		(0)	X0011	
	000X				(ii) A.S.R	
(Perma	Step3:					
		101	ion	0	(i) AC = AC - M	
	1,2		1		1 000	
104	0 1101 0	116)		(1)	+ 1001	
			1011	0	1010	
	10117				(ii) A.S.R	
	Step 4:					
4	10100 10	0110	0111	1	ON AC = AC+M	
	1	0110	1110	111)	+ 0111	
	10010	0011	321	0	X0100	
	ANS: (00100011)	= (35)		i	(neglect carry)	
	2	10			III A.S. R	
	01	121-1	10-1	X 183	100.	

vision

(U19CSO12)						
10.> (B) (3) × (-6)	n = 4 bits		(6)			
=(-18)10	M = 131 -	(0011)	0011			
6 0110	-M = (-3) =	(1101)	1'3 1100			
1113 1001	110 40 1	2 0.01d M	+ 1101			
(2'5) 1010	(8) = (-6) =	(1010)2	(10)			
(11) 1010	301)	(1-2) M				
AC	Q	9-1	Operation			
(Step1) 0000	1010	(0)	20			
17			(i) ASR			
0 000	0100	6				
	1	7				
(Step 2)			(1) AC-AC-M			
1101	0101	0	0000			
deal at			1011 + 1101			
1110	1016		(101)2			
100 2 XI 14	1	1	(ii) A.S.R.			
(Step 3) 0001	1010	41311	(1) AC = AC+M			
1110 + 12			90,0			
LIGGE		- Allen	+ 0011			
			X0001			
0000	1100	6	Heglect corry)			
0000	1100	10110	n.s.K			
(Step 4)		Aura	(i) AC=AC-M			
1101	1101	0	0000			
2 A)	1101		t 1101			
			(1101)			
12/1/110	1110	000 1	(A) A.S.R			
(3) (+)×(-11)=(-11)		(-u number)				
l's 0001 0001						
+						
	(00010010)2 =	(-ve)(18)				
Ans: (3) x (-6) = (-	- 18)				
	10	10				

10.> (1) (-2) * (4) n= 4 bits $M = (-2)_2 = (1110)_2$ 0010 1's 1101 $-M = (2)_{2} = (0010)_{2}$ 1110 2'1 $Q = (4)_2 = (0100)_2$ Operations 9-1 AC 0100 (0) (Step1) 0000 (1) A.S.R 1000 0000 00100 (Stp2) 0000 0 000(1) 1) (1) AS.R (i) AC = AC-M 0000 11+ 0010 0 0001 0010 (0010) viil A.S. R 0001 0006) (1) AC = AC+M (Step 3) M 24 (1111 1000 0000 + 1110 (1111) (ii) A.S. R 1004 1111 1000 (0) Step4 JIII (i) A.S. R 1100 0 (||| || 00) (-ve) (+ve) x(-ve) = (-ve) 1'3 (000000) 1) $(00000100) = (-8)_{0}$ Anc: $(-2) \times (4) = (-8)$

vision

(D) (-5)x(-3)	⇒ n = 4 bits	=> n = 4 bits = no- of rigisters			
0 4 2 1	M = (-5)				
(0101)2	(0)		0011		
1's 1010	-M = (5) 10 = ((0101)2	11/2 1100		
+ (1011)			+ 1		
(1011)	$\emptyset = (-3)_{10} = ($	1101)	2'1 1101		
	100100 = 310	A P	1		
AC	φ	9-1	Operation		
(Step1) 0000	1100	0	ra unal		
1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9	t	M-JA: AC= AC-M		
0			0000		
			+ 0101		
0101	1101	0	(0101)		
1			ui) A.S.R		
0010	1116	0			
(Step 2)	1	1.	(i) AC = AC+M		
1101	1110	1	0010		
4 1000			+1011		
A & A Like A			1101		
1110	1110	6	(ii) A.S.R		
(1)4 28 (1)	7	7	(1.902)		
(Step3) 0011	1111	0	(i) AC = A(-M		
10111 + 1			9110		
0001	111(1)	(1)	+ 0101		
1	1	1	1100x 10011		
			(neglect carry)		
3 3 1 11 0		11	VIII AS.R		
(Step 4)			or we wint		
0 000	1111	001 191	(i) A.S.R		
(-V1)x (-V1) (0000	1111), z +x (15)	+			
= (1/1/2)	2 (0.10.1)	0	Submitted By:		
Ans: C5	1) × (-3) = (15)10	LEX	U19CS012 (D-12)		