ARM Instructions Practice Problems

CDA 3101

What is the ARM assembly language instruction that corresponds to the following machine code:

0xCA0A012A

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0xCA0A012A

1100 1010 0000 1010 0000 0001 0010 1010

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0xCA0A012A

110010100000 1010 0000 0001 0010 1010

STXR	D	11	11001000000	
LDXR	D	11	11001000010	
EOR	R	11	11001010000	
SUB	R	11	11001011000	
SUBI	I	10	1101000100	
EORI	I	10	1101001000	
MOVZ	IM	9	110100101	
LSR	R	11	11010011010	

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11001010000 0 1010 0000 0001 0010 1010

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What is the ARM assembly language instruction that corresponds to the following machine code:

0xCA0A012A

11001010000 01010 000000 01001 01010

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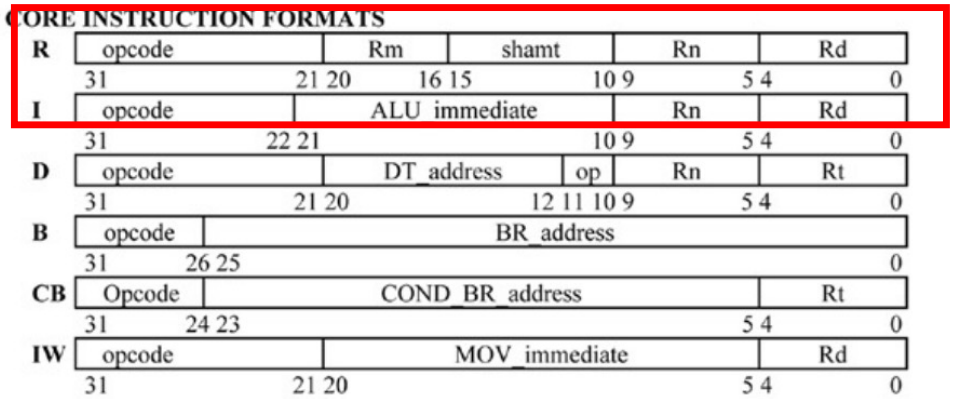
LDXR	D	11	11001000010
EOR	R	11	11001010000
SUB	R	11	11001011000
SUBI	I	10	1101000100
	I	10	1101001000
	IM	9	110100101
	R	11	11010011010



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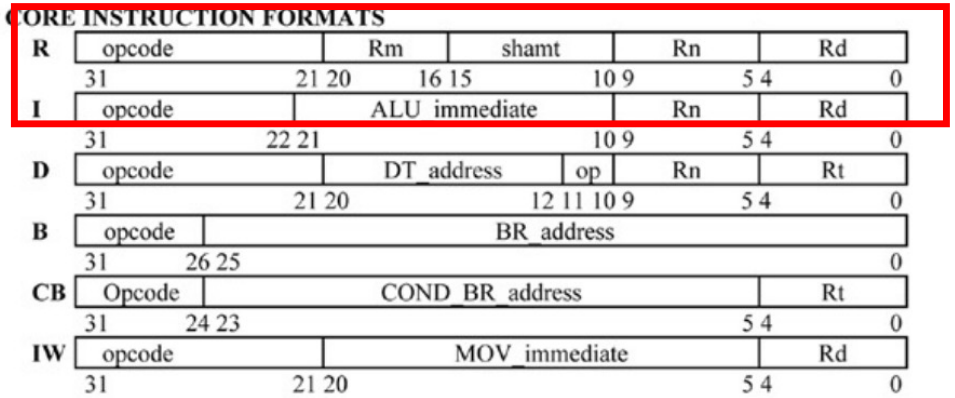


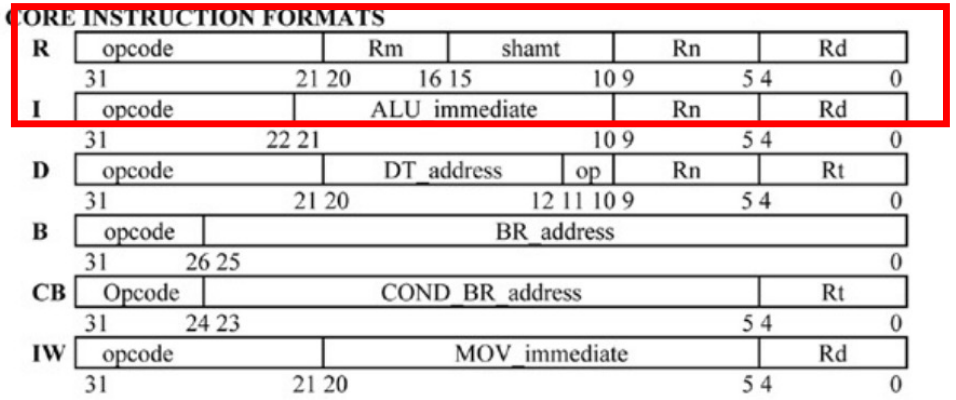
Rm = 01010 = X10
Rn = 01001 = X9
Rd = 01010 = X10

What is the ARM assembly language instruction that corresponds to the following machine code:

0xCA0A012A

11001010000 01010 000000 01001 01010

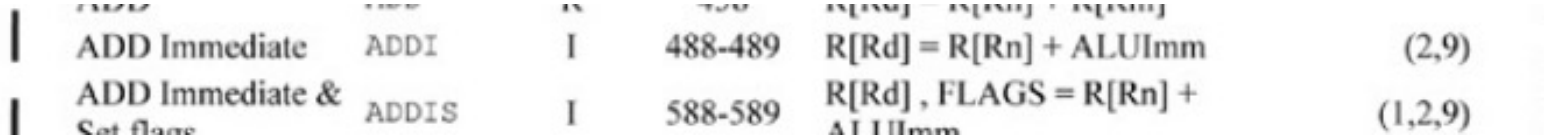
EOR X10, X9, X10



Rm = 01010 = X10
Rn = 01001 = X9
Rd = 01010 = X10

Convert the following assembly language instruction to machine code:

ADDI X13, X14, #100



ADD Immediate	ADDI	I	488-489	R[Rd] = R[Rn] + ALUImm	(2,9)
ADD Immediate & Set flags	ADDIS	I	588-589	R[Rd] , FLAGS = R[Rn] + ALUImm	(1,2,9)

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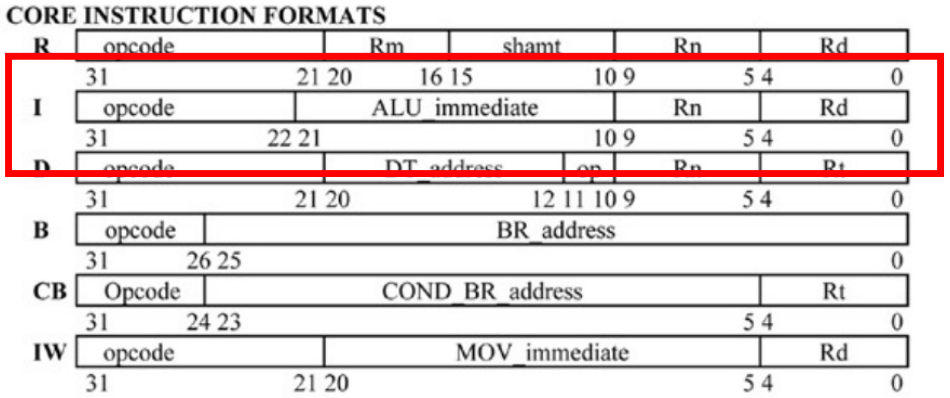

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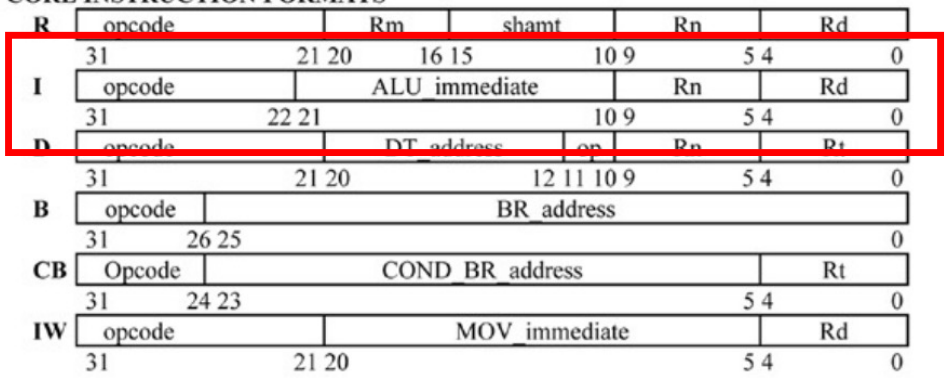
ADDI	I	10	1001000100	488	489
ANDI	I	10	1001001000	490	491

CORE INSTRUCTION FORMATS



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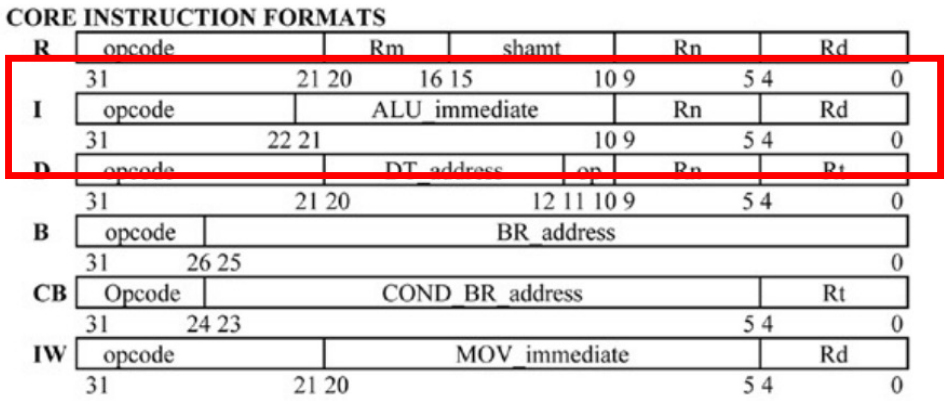
1001000100 000001100100 01110 01101

ADDI	I	10	1001000100	488	489
ANDI	I	10	1001001000	490	491



Convert the following assembly language instruction to machine code:

ADDI X13, X14, #100

1001000100 000001100100 01110 01101

1001 0001 0000 0001 1001 0001 1100 1101

0x910191CD