SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

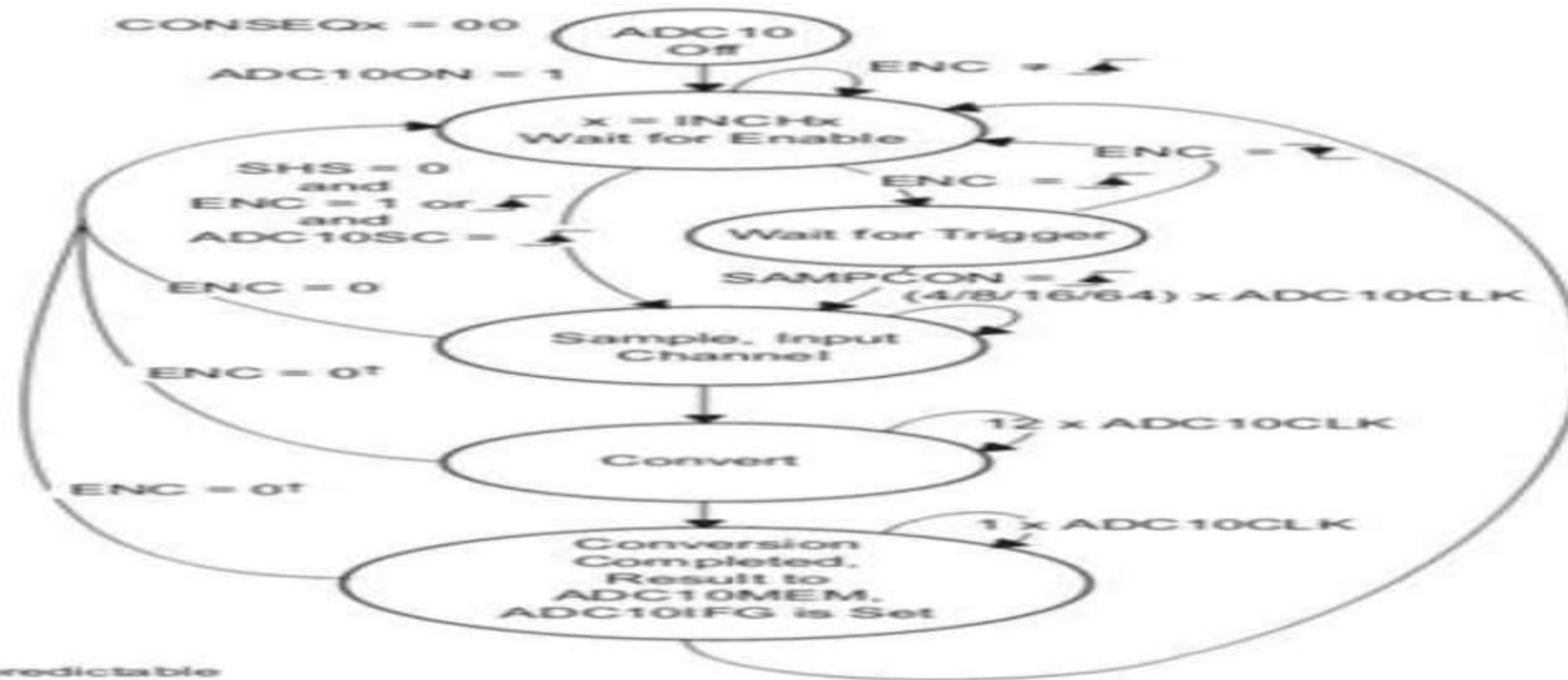## 19ECB211 – Microcontroller Programming & Interfacing

II YEAR/ IV SEMESTER

UNIT 5 – Advanced Microcontrollers

TOPIC 5 -ADC Application Development

on modes, this process are being sampled or repeatedly.

Process for Single Channel Single

Figure 5 – ADC10CTL0 Register

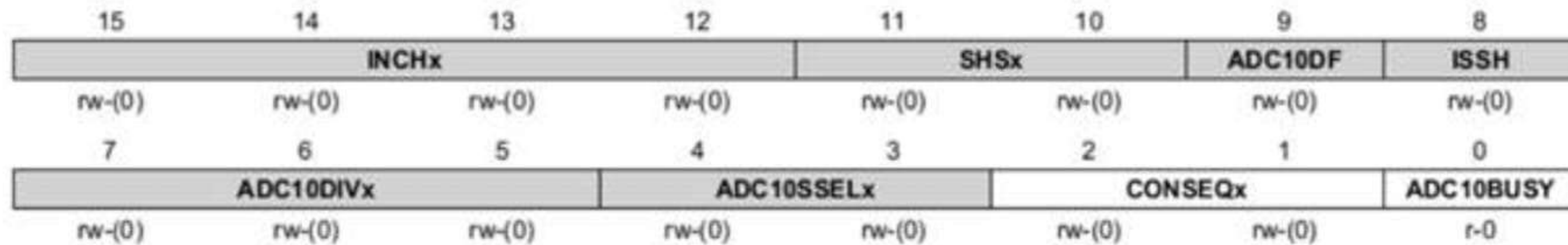| 15	14	13	12	11	10	9	8
INCHx				SHSx		ADC10DF	ISSH
rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)

7	6	5	4	3	2	1	0
ADC10DIVx			ADC10SSELx		CONSEQx		ADC10BUSY
rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	r-0

Figure 6 – ADC10CTL1 Register

registers that are used to configure the operation of the ADC are the control registers A figures below show the contents of these registers:

15	14	13	12	11	10	9	8
SREFx			ADC10SHTx		ADC10SR	REFOUT	REFBURST
rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)
7	6	5	4	3	2	1	0
MSC	REF2_5V	REFON	ADC10ON	ADC10IE	ADC10IFG	ENC	ADC10SC
rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)	rw-(0)

Figure 5 – ADC10CTL0 Register

On the next page is a table giving a brief description of the portions of these control registers that are essential for basic use of the ADC.

Register Section	Description
SREFx	Selects high and low reference voltage for ADC
ADC10SHTx	Sets ADC sample and hold time
ADC10ON	Turns ADC on or off
ADC10IE	Enables or disables ADC interrupt
ADC10IFG	Interrupt flag set when ADC10MEM is loaded with conversion result
ENC	Enables conversion
ADC10SC	Starts conversion
INCHx	Selects input channel
ADC10DIVx	Selects divider for the selected ADC clock
ADC10SSELx	Selects source of the clock that will control the ADC
CONSEQx	Selects conversion sequence mode
ADC10BUSY	Indicates whether the ADC is active

Figure 7 – Description of key control register sections

THANK YOU