6) Programs involving Software interrupts
Programs to use DOS interrupt INT 21h Function calls for Reading a Character from keyboard, Buffered Keyboard input, Display of character/ String on console

II) Experiments on interfacing 8086 with the following interfacing modules through DIO (Digital Input/Output-PCI bus compatible) card
a) Matrix keyboard interfacing
b) Seven segment display interface
c) Logical controller interface
d) Stepper motor interface

III) Other Interfacing Programs
a) Interfacing a printer to an X86 microcomputer
b) PC to PC Communication

ELECTIVE – GROUP A
ANALOG AND MIXED MODE VLSI DESIGN

Subject Code	: **10EC661**	IA Marks	: 25
No. of Lecture Hrs/Week	: 04	Exam Hours	: 03
Total no. of Lecture Hrs.	: 52	Exam Marks	: 100

(Text Book 1)

UNIT 1
Data converter fundamentals: Analog versus Digital Discrete Time Signals, Converting Analog Signals to Data Signals, Sample and Hold Characteristics, DAC Specifications, ADC Specifications, Mixed-Signal Layout Issues.

UNIT 2
Data Converters Architectures: DAC Architectures, Digital Input Code, Resistors String, R-2R Ladder Networks, Current Steering, Charge Scaling DACs, Cyclic DAC, Pipeline DAC, ADC Architectures, Flash, 2-Step Flash ADC, Pipeline ADC, Integrating ADC, Successive Approximation ADC.

UNIT 3
Non-Linear Analog Circuits: Basic CMOS Comparator Design (Excluding Characterization), Analog Multipliers, Multiplying Quad (Excluding Stimulation), Level Shifting (Excluding Input Level Shifting For Multiplier).

(Text Book 2)

UNIT 4:
Data Converter SNR: Improving SNR Using Averaging (Excluding Jitter & Averaging onwards), Decimating Filters for ADCs (Excluding Decimating

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without Averaging onwards), Interpolating Filters for DAC, Band pass and High pass Sync filters.

UNIT 5

Su-Microns CMOS circuit design: Process Flow, Capacitors and Resistors, MOSFET Switch (upto Bidirectional Switches), Delay and adder Elements, Analog Circuits MOSFET Biasing (upto MOSFET Transition Frequency).

UNIT 6

OPAmp Design (Excluding Circuits Noise onwards)

TEXT BOOK:

1. **Design, Layout, Stimulation ,**R. Jacob Baker, Harry W Li, David E Boyce, CMOS Circuit, PHI Education, 2005

2. **CMOS- Mixed Signal Circuit Design ,**R. Jacob Baker, (Vol II of CMOS: Circuit Design, Layout and Stimulation), John Wiley India Pvt. Ltd, 2008.

REFERENCE BOOKS:

1. **Design of Analog CMOS Integrated Circuits**, B Razavi, First Edition, McGraw Hill,2001.

2. **CMOS Analog Circuit Design**, P e Allen and D R Holberg, 2nd Edition, Oxford University Press,2002.

SATELLITE COMMUNICATION

Subject Code	: **10EC662**	IA Marks	: 25
No. of Lecture Hrs/Week	: 04	Exam Hours	: 03

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