

**HEMCHANDRACHARYA, NORTH GUJARAT UNIVERSITY, PATAN**  
**B.E SEMESTER - III (IT)**  
**IT305: DIGITAL ELECTRONICS & FUNDAMENTALS OF MICROPROCESSORS**  
(In force from June 2006)

TEACHING SCHEME:

THEORY 04 HRS/WEEK  
PRACT 02 HRS/WEEK

TOTAL 06 HRS/WEEK

EXAM SCHEME:

THEORY 100 MARKS(3 HRS)  
PRACT 25 MARKS  
TW/VIVA 25 MARKS

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TOTAL 150 MARKS

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Data And Number Representation - Binary - Complement Representation Bcd - ASCII, ASCII

Boolean Algebra, Logic Gates, Minimization, Use Of Programs Such As Espresso In Minimization

Digital Circuit Technologies, RTL/DTL/DCTL/TTL/MOS/CMOS/ECL, Analysis Of Basic Circuits In These Families, Internal Architecture Of Programmable Logic Devices

Combinational Design, Design With MUXES

Sequential Circuits, Flip-Flops, Counters, Shift Registers, MultiVibrators, State Diagrams -Sequential Circuit Design From State Diagrams - Computer Aids In Synthesis

Memory System - RAM, ROM, EPROM, PAL, PLDS, PGAS

Bus Structures, Transmission Line Effects, Line Termination.

Ad And Da Conversion Techniques And Selected Case Studies.

Cad Tools, FPGA Based Design Exercises

Introduction To VLSI Design, Custom And Semi-Custom Design

8085 Microprocessor Architecture And Memory Interfacing.

- Microprocessor Architecture and its Operations.
- Memory and I/O Devices.

Interfacing I/O Devices :

- Basic Interfacing Concepts.
- Interfacing Output Devices.
- Interfacing Input devices.
- Memory-Mapped I/O.

Fundamental of Microprocessor Programming

Interfacing Peripherals :

- o Interrupts.
- o General Purpose Programmable Peripheral Devices.

## HEMCHANDRACHARYA, NORTH GUJARAT UNIVERSITY, PATAN

### REFERANCE BOOKS:

- 1) Digital Desilgn {By Morris Mano}
- 2) Designilng With Fpgas And Cplds {By Jesse li Jenkins}
- 3) Digital Integrated Electronics {By H Taub & D Schilling}
- 4) VHDL {By Douglas L Perry}
- 5) Introduction To Vlsi Systems {By C Mead And I Conway}
- 6) Electronics For Scientists And Engineers  
{By T.R.Viswanathan , G.K.Mehta And Rajaraman}
- 7) Integrated Electronics, Analog And Digital Circuits And Systems  
{By J . Millman And Halkias}
  
- 8) Microprocessors Architecture Programming And Applications  
With The 8085. {By Ramesh S. Gaonkar.}  
Penram International Publishing (India).