

GENI

1
2

1
2

1

2
3
4
5
6
7
8

9
11
12
13
14
15
16

REFERI

Note

1
2
3
4
5

Department of Technical Education

Diploma in Computer Science & Engineering / Information Sc. & Engg.

FIRST SEMESTER

SUBJECT : DIGITAL LAB (CS&IS)

Hrs/Week -- 6

Total No. of Hrs. - 96

ERAL OBJECTIVES:

On completion the lab course, the student will be able to
 Familiarize with the use of digital ICs , IC TESTER
 Understand and comprehend the simple design aspects of digital circuits

LIST OF GRADED EXERCISES

Part A

Familiarization of Digital trainer kit, IC tester, Logic pulser, logic probe
 Study of IC Manual and familiarization of Ics and IC families

Part B

Familiarization of logic gates using Ics
 a) 7400 b) 7402 c) 7404 d) 7408 e) 7432 f) 7486

Realization of NOT, OR, AND, NOR, EX-OR and EX-NOR gates using NAND gate
 Realization of NOT, OR, AND, NOR, EX-OR and EX-NOR gates using NOR gate
 Implementing and verifying Boolean Expression using logic gates
 Verification of DeMorgan's theorem and realization of the given expression using Demorgan's law
 Implementing Half Adder and Full Adder using logic gates
 implementing Half Subtractor and Full Subtractor using logic gates
 Verification of truth table of Flip-Flop
 i) Clocked RS FF using NAND Gates
 ii) JK FF Using IC 7476
 iii) MS-JK FF Using IC 7476
 iii) T and D FF
 Realize Binary to Gray code converter using IC 7486
 Interface 7 segment display with IC 7447 / 7448 decoder .
 Verify the truth table of 1:8 Demultiplexer and 8:1 multiplexer using IC 74138 and 74151 respectively
 Realize and verify the truth table of 4:1 Multiplexer using 2:1 Multiplexer (74157)
 Shift Registers SISO,SIPO, PISO, PIPO using 7495
 Up-down counter using 74190/74191
 Decade counter using 7490

ENCES :

DIGITAL ELECTRONICS PRACTICE WITH INTEGRATED CIRCUITS
 R.P.JAIN AND MMS ANAND

SCHEME OF VALUATION

Pin diagrams of IC's shall be provided to the students .

Record
Write any one Experiments (Circuit Diagram, Truth Table Expression)
Conduction any one Experiment
Result
Viva-Voce
Total

6
6
3

6
6
6
6
6
6
12

3
3
6
3
12
3
3
96

5
30
30
15
20
100