

Bachelors of Science

SEM I

Journal

Roll No.	001
Name	Alston Alvares
Subject	Digital Logic and Applications.

ANANDIBAI DAMODAR KALE
SHAIKSHANIK SANSTHA'S DEGREE



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CERTIFICATE

This is here to certify that Mr/Ms. Alston Alvares, Seat Number 001 of B.Sc. IT, has satisfactorily completed the required number of experiments prescribed by the **ANANDIBAI DAMODAR KALE DEGREE COLLEGE AFFILIATED TO UNIVERSITY OF MUMBAI** during the academic year 2022 - 2023.

Date:

Place: Mumbai

Teacher In-Charge

Head of Department

External Examiner

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1	Study of basic gates and Universal gates a. To verify the truth tables of OR, AND, NOR, NAND, EX-OR, EX-NOR gates b. To study IC 7400, 7402, 7404, 7408, 7432, 7486, 74266 c. To implement and verify NAND and NOR as Universal gates	01-05		
2	2. Study of Boolean expressions a. To verify De Morgan's laws b. Implement the given expression using a minimum number of gates. c. Implement the given expression using a minimum number of ICs.	06-07		
3	3. Design of Combinational Circuits using K-maps a. Design and implement combinational circuits for the given problem/problems using minimization techniques of K-maps.	08-10		

4	<p>Design and implement code converters</p> <p>a. Design the circuit and implement Binary to gray code converter</p> <p>b. Design the circuit and implement Gray to Binary code converter</p> <p>c. Design the circuit and implement Binary to BCD code converter d. Design the circuit and implement Binary to XS-3 code converter.</p>	11-14		
5	<p>Implement Adder and Subtractor circuits</p> <p>a. Design the circuit and implement Half Adder and Full Adder</p> <p>b. Design the circuit and implement BCD Adder, XS-3 Adder , Binary Subtractor</p>	15-19		
6	<p>Design and implement Arithmetic circuits</p> <p>a. Design and implement 2-by-2 bit multiplier</p>	20-22		
7	<p>Implement Encoders and Decoders</p> <p>a. Design and implement 8: 3 encoder</p> <p>b. Design and implement 3:8 decode</p>	23-26		
8	<p>Multiplexers and Demultiplexers</p> <p>a. Design and Implement 4:1 multiplexer</p> <p>b. Design and Implement 1:4 demultiplexer c. Study IC 74151 8: 1 multiplexer and implement the expression</p> <p>d. Study IC 74138 3: 8 decoder and implement the expression</p>	27-35		