**Bachelors of Science**

**SEM I**

**Journal**

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

**ANANDIBAI DAMODAR KALE** **ANANDIBAI DAMODAR KALE**

**SHAIKSHANIK SANSTHA’S** **DEGREE COLLEGE OF ARTS & COMMERCE**

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ISO 9001: 2008 Certified

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