



C16-AEI-303

**6215**

**BOARD DIPLOMA EXAMINATION, (C-16)  
JANUARY/FEBRUARY—2022  
DAEIE - THIRD SEMESTER EXAMINATION  
DIGITAL ELECTRONICS**

*Time : 3 hours ]*

*[ Total Marks : 80*

**PART—A**

3×10=30

- Instructions :**
- (1) Answer **all** questions.
  - (2) Each question carries **three** marks.
  - (3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Compare weighted and unweighted codes in any three aspects.
2. State De-Morgan's theorems.
3. State the function of Half-adder.
4. List any three applications of multiplexers.
5. State the need of preset and clear inputs.
6. State the race around condition.
7. Define counter.
8. Define the term Register.
9. List various types of Memories.
10. Define the need for D/A conversion.

/6215

1

[ *Contd...*

\*

\*

## PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. State any five postulates in Boolean algebra.
12. Explain the working of AND and OR gates using truth tables.
13. Draw and explain 2's complement Parallel adder/subtractor circuit.
14. Draw and explain the operation of  $4 \times 1$  Multiplexer.
15. Explain JK flip-flop with the help of truth table.
16. Explain MOD-10 or Decade counter with the help of flip-flops and gates.
17. Explain the working of Serial in Serial out, Serial in Parallel out Registers with diagrams.
18. Explain D/A conversion using weighted resistors.

★ ★ ★

\*

\*