



C16-AEI-303

6215

BOARD DIPLOMA EXAMINATION, (C-16)

AUGUST/SEPTEMBER—2021

DAEI - 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. Convert $4A3_{(16)}$ to binary.
2. Compare weighted and unweighted codes.
3. Define combinational logic circuit.
4. List the applications of multiplexers.
5. State the need of 'preset' and 'clear' inputs.
6. Define modulus of the counter.
7. List the application of ring counter.
8. List various types of memories.
9. State the need of a register.
10. Define the terms resolution of D/A converter.

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[Contd...

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PART—B

- 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. (a) Draw the OR, AND and NOT gates with truth tables. 6
(b) Convert $110111_{(2)}$ to Excess-3 code and Gray code. 4
12. (a) State different postulates in Boolean algebra. 5
(b) Explain the working of NAND gate with truth table. 5
13. Explain the operation of 3×8 decoder. 10
14. Explain the working of serial adder with block diagram. 10
15. Explain JK flip-flop with truth table. 10
16. Explain D flip-flop and T flip-flop with truth tables and diagrams. 10
17. Explain working of the shift right register. 10
18. Explain A/D conversion using counter method. 10

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