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C16-AEI-303

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BOARD DIPLOMA EXAMINATION, (C-16)

MARCH/APRIL—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. State the importance of a parity bit.
2. Draw the diagrams of NAND, NOR and EX-OR gates.
3. State the function of the half adder.
4. Draw the diagram of 2X4 decoder.
5. Draw the diagram of SR flip-flop using NAND gate.
6. List the conditions for eliminating race around condition.
7. Define modulus of the counter.
8. Define the term register.
9. List different ROM and RAM IC's.
10. State the need of D/A converter.

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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) Convert  $567_{(10)}$  to binary and hexadecimal. 6  
(b) Subtract  $11010_{(2)}$  from  $101101_{(2)}$  using 2's complement method. 4
12. Develop AND, OR NOT gates using NAND, NOR gates. 10
13. Explain 4-bit parallel adder using full adders. 10
14. Explain the operation of IX 4 de-multiplexer. 10
15. Explain JK master-slave flip-flop with truth table. 10
16. Explain Asynchronous Decade (MOD=10) ripple counter. 10
17. Explain the basic principle & working of RAM. 10
18. Explain A/D conversion of successive approximate method. 10

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A.A.N.M & V.V.R.S.R POLYTECHNIC, GUDLAVALLERU, KRISHNA

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