Code: C16 CM/IT-302

6228

BOARD DIPLOMA EXAMINATION MARCH/APRIL - 2019

* DIPLOMA IN COMPUTER ENGINEERING/INFORMATION TECHNOLOGY DIGITAL ELECTRONICS & COMPUTER ARCHITECTURE THIRD SEMESTER EXAMINATION

Time: 3 Hours Total Marks: 80

PART - A $(3m \times 10 = 30m)$

Note 1:Answer all questions and each question carries 3 marks

2:Answers should be brief and straight to the point and shall not exceed 5 simple sentences

- 1. Draw the logic symbol and write the operation of NAND and NOR gates
- 2. Write any six postulates of Boolean algebra
- 3. State the need of master slave J-K flip flop
- 4. Write the usage of registers
- 5. Write the truth table for decimal to BCD decoder
- 6. Write the purpose of Accumulator, Instruction register and program counter in Accumulator based CPU
- 7. Write about zero address instructions
- 8. Define mantissa and exponent of floating point numbers
- 9. Write associative memory principal
- 10. List different peripheral devices which are connected to computer

PART - B $(10m \times 5 = 50m)$

Note 1:Answer any five questions and each question carries 10 marks

- 2:The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer
- 11. Explain operation of half adder and draw the circuit using NAND gates only
- 12. Draw and explain operation of Clocked R-S flip flop with truth table and timing diagram
- 13. Draw and explain the circuit of 4-bit synchronous counter
- 14A. Explain the working of Parallel in serial out shift register
 - B. Explain the operation of 1X4 de multiplexer

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- 15. Write about the following
 - a) Stored program concept b) Instruction cycle
- 16. Explain zero address, one address, two address and three address instructions with simple example
- 17A. Explain floating point multiplication operation with flowchart
 - B. Explain Associative memory
 - 18. (a) Write about different bus systems
- A.A.H.M. & V.V.R.S.R. POLYTEINIC, GUDLAVALLERU, KRISHNA DIST, A.P. (b) Explain synchronous data transfer

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