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 x 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 x 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

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**

    (b) Explain synchronous data transfer

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