6228

BOARD DIPLOMA EXAMINATION

JUNE - 2019

DIPLOMA IN COMPUTER ENGINEERING/iINFORMATION 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. Minimise the following Boolean function using K-Map
   $F(w,x,y)=\sum m(1,2,3,5,6,7)$
2. Draw the symbols and truth tables for following gates:
   a)EX-OR b) EX-NOR
3. what is the use of binary cell
4. Write the drawbacks of ripple counter
5. What is a combinational circuit? Draw the block diagram
6. Write the purpose of Accumulator, Instruction register and program counter in Accumulator based CPU
7. Write about following addressing modes
   i) immediate ii) indirect
8. Define mantissa and exponent of floating point numbers
9. List different characteristics of memory devices
10. Define system bus. Write different buses used in 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. Draw and explain operation of 4-bit 2's complement adder/subtractor
12. a) Write about asynchronous inputs of flip flop.
    b) draw the block diagram of master-slave J-K flip flop
13. Draw and explain the operation of 3-bit asynchronous counter

14A. Explain the operation of 4-bit shift right 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 cache memory organization

18. Explain in detail DMA control data transfer

- xxx -