3470

BOARD DIPLOMA EXAMINATION, (C-09)

OCTOBER / NOVEMBER - 2011

D.E.E.E. - IV SEMESTER EXAMINATION

DIGITAL ELECTRONICS AND MICRO CONTROLLERS

Time : 3 Hours] [Total Marks : 80

PART - A 3×10 = 30

Instructions : (1) *Answer all questions and each question carries three marks.*

(2) *Answers should be brief and straight to the point and shall not exceed five simple sentences.*

1 Draw the symbol and truth table of 3-input EX-OR gate.

2 Compare the performance of parallel adder and serial adder.

3 List the different types of RAM's.

4 What is a shift register ? List the different types of shift registers.

5 List any six-special function registers of 8051 Microcontroller.

6 At what memory location does the 8051 wake up upon RESET ? What is the implication of that.

7 Explain SWAP A instruction with example.

8 What is the difference between MOV and MOVX instructions ?

9 Write about SETB C, CPLC and NOP instructions.

10 Draw a flow chart to add two numbers stored in the RAM locations 60H and 61H and to store the result in the register R6.

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PART - B

$5 \times 10 = 50$

Instructions : *(1) Answer any five questions and each question carries* ***ten*** *marks.*

(2) The answers should be comprehensive and the criteria for valuation is the content but not in the length of the answer.

11 (a) Write about BCD codes. 4

(b) Convert $A9FC.43_{16}$ into octal number system. 4

(c) Divide 1111_2 by 11_2. 3

12 (a) Draw the logic circuit and explain the operation of 2X4 decoder. 6

(b) Explain the importance of parity bit. 4

13 (a) Draw the diagram and explain the working of 4 bit asynchronous counter. 6

(b) Draw the diagram of an asynchronous counter to count up to 10 clock pulses. 4

14 (a) Explain the operation of NAND latch with its truth table. 4

(b) Draw the circuit and explain the operation of master slave JK flip flop. 6

15 Explain the internal and external memory organization of 8051. 10

16 (a) Draw and explain the bitwise description of SBUF register. 5

(b) Draw and explain the bitwise description of PCON register. 5

17 Explain the five major groups of instruction set of 8051 with two examples of each. 10

18 Write an assembly language program along with comments to multiply two 8-bit numbers stored in the memory locations 2400H and 2401H and save the results at 2402H and 2403H. 10

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