8th Sem

Roll No. .....

Total Pages : 3

80682

B.Tech., VIII Semester - Electronics Engineering Examination

EMBEDDED SYSTEM DESIGN

(EIC-404)

Time : 3 Hours] [Max. Marks : 60

Instructions :

(i) It is compulsory to answer all the questions (2 marks each) of Part-A in short.

(ii) Answer any four questions from Part-B in detail.

(iii) Different sub-parts of a question are to be attempted adjacent to each other.

PART–A

1. (a) Name the types of 8051 interrupts signals. (2)

(b) Define clock cycle and machine cycle. (2)

(c) Mention the bit addresses of ports P0 and P1. (2)

(d) What is the function of SMOD in PCON register? (2)

(e) What is the significance of DPTR in 8051? (2)

(f) What is the function of INTCON in PIC? (2)

(g) What is the role of PCLATH in PIC? (2)

(h) What are Pre Scalar and Post Scalar in PIC? (2)

(i) What is Synchronous and Asynchronous Data Transfer? (2)

(j) Enlist any 4 reset options for PIC. (2)

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PART–B

2. (a) Explain the following addressing modes with an example. (5)

   (i) Indirect Addressing Mode

   (ii) Indexed Addressing Mode

   (iii) Direct Addressing Mode.

   (b) Explain the following instructions with an example for 8051 (5)

   (i) SWAP A

   (ii) RRC A

   (iii) DIV AB

   (iv) XCHD A,@Ri

   (v) DA A.

3. (a) Draw and explain PSW of 8051 microcontroller. (3)

   (b) Write an Assembly Language Program for 8051 to toggle all the bits of P1 continuously after every 1 second. (7)

4. Explain following instruction with suitable example for PIC. (10)

   (i) ADDWF f,l

   (ii) BTFSS f,b

   (iii) INCFSZ f,d

   (iv) RETLW k

   (v) SWAPFREG,0.

5. (a) Define interrupt, and mention the difference between interrupt and polling method and also write the steps in executing interrupt for 8051 based system. (5)

(b) What is the advantage and disadvantages of Mode 2 operation of 8051 when compared to Mode 1 Operation. (5)

6. (a) Explain Instruction pipelining for instruction fetching from successive addresses and for go to instruction in PIC. (5)

(b) What is the purpose of INTCON and PIR register in PIC. (5)

7. Design a system based on 8051 or PIC to control a stepper motor with following control (10)

(a) Forward and Reverse rotation

(b) Start /Stop

(c) Speed Control.
