B.Tech., 8th SEMESTER (Dec 2018)
Embedded System Design (EIC 404)

14/12/18 E

Time: 3 Hours **Max. Marks:60**

Instructions:
1. *It is compulsory to answer all the questions (2 marks each) of Part -A in short.*
2. *Answer any four questions from Part -B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART -A

Q1 (a) Enumerate three main components of an embedded system. (2)

(b) What are the various classifications of embedded system? (2)

(c) Draw SCON register of 8051? (2)

(d) What are the advantages of Assembly language (2)

(e) What is the use of interrupt service routines or device drivers? (2)

(f) What are the default contents of SP, Accumulator at Power up in 8051? (2)

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

(h) What are TRIS A and TRIS B in PIC? (2)

(i) What is the significance of Auxiliary Carry flag 8051? (2)

(j) List the Interrupt sources in 8051. (2)

PART -B

Q2 (a) Draw RAM organization of 8051? How switching between register banks is possible? Give a sequence of instructions to switch from bank-0 to bank-2. (5)

(b) Draw Block Diagram of Harvard Architecture and list four advantages Harvard Architecture has over Princeton Architecture? (5)

Q3 (a) Write a Program for 8051 to initialize Timer 1 in auto reload mode so that it overflows 10000 times in one second (5)

(b) Show the use of PUSH and POP instruction giving an example. (5)

Q4 Give example and syntax of following instruction in PIC. (10)
i. ADDWF f,1 ii. BTFSS f,b iii INCFSZ f,d iv. RETLW k
v. SWAPF REG,0

Q5 (a) What are the advantages and disadvantages of MODE 2 operation of 8051 when compared to Mode 1 Operation? (5)

(b) Draw the structure of a pin in port 1. (5)

Q6 (a) Enlist two instructions each of byte oriented, bit oriented and literal and control operations in PIC family. Give one example of each. (5)

(b) Show Timer 0 operations in PIC with emphasis on pre and post scaling (5)

Q7 (a) Design a circuit for interfacing PIC to DC Motor. Draw the flow chart for control. (5)

(b) Design an 8051 based system to control stepper motor. Draw its flow chart for control. (5)

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