INST/V/ Application of Microcontrollers

19/05/15

INST

K. G. C. E. EXAM KARJAT, RAIGAD

QP Code : 3333

(3 Hours) **[Total Marks-80**

N.B: 1. Question No. 1 is Compulsory.
2. Attempt **any Three** from the remaining questions.
3. Assume suitable data wherever necessary.
4. Figure to right indicate full marks.

1. Attempt **any Five** questions- (20)
   a) List the important features of RISC and CISC processors.
   b) Differentiate between Timer and Counter operation of 8051.
   c) Write features of 8051 Microcontroller.
   d) Interface EEPROM to 8051 using I^2C protocol and write a program to read data from memory.
   e) Write a short note on serial communication with PC.
   f) Interface LED and relay to 8051 microcontroller. Write a program to toggle LED.

2. a) Explain the memory organization in MCS-51 microcontroller. Describe TCON & SCON SFR's. (10)
   b) Write an assembly or C language program to generate 2 KHz square wave on port pin 1.0 assume an oscillator running at 12 MHz. (10)

3. a) Draw and explain addressing modes of 8051 with instruction example. (10)
   b) Explain the interfacing of relay and opt isolator with 8051 microcontroller. (10)

4. a) Explain the power saving and power down mode of 8051 in details. (10)
   b) Explain the architecture of MCS151. (10)

5. a) i) Write a program to perform division of two 8-bit numbers. Store the result in memory location 4500 and 4501 respectively. (05)
      ii) Explain the evaluation of microprocessors. (05)
   b) Explain SPI and CAN bus in detail. (10)

6. Attempt any two- (20)
   a) Programming model of 8051 microcontroller.
   b) Interface DAC with 8051 parallel port and write a program to generate square wave continuously.
   c) Port structure of 8051.

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