Roll No. _____ [Total No. of Pages : 2]

SVIS 340 A-2K12

B.Sc. VIth Semester Degree Examination
Electronics Optional
Instrumentation and Microcontrollers
Paper -6.2

Time : 3 Hours   Maximum Marks : 80

Instructions to Candidates :

1) *Answer all questions from Section - A*
2) *Answer any five questions from Section 'B'*
3) *Answer any four questions from Section 'C'*

Section - A

1. Choose the correct answers.   (5×1=5)

   i) Resistive transducer are used to measure
      a) Several non electrical quantities.
      b) Several electrical quantities
      c) Both (a) and (b)
      d) None of these

   ii) In a peak detector C-R_L is greater than or equal to
      a) T   b) T/10   c) 10T   d) 10/T

   iii) Timers used in 8051 are
      a) Two   b) Three   c) Four   d) Six

   iv) The DPTR is of
      a) 8 bits   b) 16 bits   c) 32 bits   d) None

   v) ADC 0808 chip has _____ analog input channel.
      a) Two   b) Four   c) Six   d) Eight

2. Fill in the blanks.   (1· ᵓ)

   i) Elastic transducer is _____ transducer.
   ii) In Instrumentation amplifier output voltage is _____
   iii) The 8051 microcontroller has _____ serial port.
   iv) In DIV AB, the quotient will be placed in _____ and the reminder in _____.
   v) The output of DAC 0808 is in _____

[Contd....

3. State **True** or **False** (1×5=5)
   i) LVDT is a modified version of plunger type sensor.
   ii) The O/P of an differentiator is a spike wave when excited by square wave.
   iii) Microcontrollers are normally more expensive than microprocessor
   iv) In MUL AB, the low order byte of the 16 bit product is left in the B register.
   v) The output of DAC 0808 is ideal to drive a motor.

Section - B

4. Explain in brief thermisters. (5×5=25)
5. What is strain gauge? Explain basic principal of strain gauge.
6. What is active filter? Explain first order wide band pass filter.
7. Briefly explain peak detector.
8. Write the difference between micro processor and micro controller.
9. Write a programme to add two 16 bit numbers. The numbers are 3CE7 and 388 D. Place the Sum in R_7 and R_6.
10. Explain, Timer 0, Timer 1 of 8051 micro controller.

Section - C

11. What is transducer? Explain pressure transducer and Piezo electronic pressure transducer.
12. What is rectification? Explain precision rectifier using Op-Amp.
13. Explain the architecture of 8051.
14. Explain the Arithmetic instructions of 8051. Microcontroller.
15. What is interfacing? Explain DAC interfacing using 8051 micro controller.
16. Write short notes on any **two**
    a) LVDT
    b) Bourdon tubes
    c) Sample and hold Circuits
    d) Integrator. (10×4=40)