Seat
No.

[5252]-150

S.E. (Electrical)(Second Semester) EXAMINATION, 2017
FUNDAMENTALS OF MICROPROCESSOR AND
MICROCONTROLLER
(2012 PATTERN)

**Time : Two Hours					Maximum Marks : 50**

N.B. :— (*i*) Answer Q. **1** *or* Q. **2**, Q. **3** *or* Q. **4**, Q. **5** *or* Q. **6**, Q. **7** *or* Q. **8**.

  (*ii*) Neat diagrams must be drawn wherever necessary.

  (*iii*) Figures to the right indicate full marks.

1. (*a*) Explain the function of register Stack pointer and Accumulator.

                      [6]

 (*b*) Write an assembly language program for 8085, to interchange the contents of memory locations 9000H and 9001H.		[6]

Or

2. (*a*) Explain with an example any *three* addressing modes of 8085.[6]

 (*b*) Explain the flag register of 8085.					[6]

3. (*a*) Draw and explain the control word register of 8255.		[6]

 (*b*) Explain the functions of the following pins of 8051 :		[6]

  (*i*) ALE

  (*ii*) RST.

P.T.O.

4. (*a*) Draw the TCON register and explain the individual bits of the register in detail. [6]

(*b*) Draw the functional block diagram of 8254 PPT and explain the function of each block. [6]

5. (*a*) Explain the following instructions in detail : [6]

(*i*) MOV @R0,A

(*ii*) MOV A,#09H.

(*b*) Explain steps to be followed to receive data serially in 8051. [7]

Or

6. (*a*) Write a program to add the contents of R0 and R1 of bank 0 of 8051 and store the result of addition at a location 8100H in external data memory. [6]

(*b*) Write a short note on interrupt structure of 8051. [7]

7. (*a*) A stepper motor is interfaced with 8051 through a driver card. The motor is controlled through most significant 4 bits of Port 2. The step angle of the motor is 1.8 degrees. Write a program to run the motor in anticlockkwise direction through an angle of 180 degrees. The excitation sequence is 05H, 09H, 0AH, 06H. [8]

(*b*) With a neat diagram explain the measurement of energy using 8085. [5]

8. (*a*) With a neat diagram explain how power factor can be measured using 8085. [6]

(*b*) With a neat diagram explain temperature measurement using 8051 microcontroller. [7]