Seat
No.

[5352]-150

S.E. (Electrical) (Second Semester) EXAMINATION, 2018

**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.

        (*iv*)   Assume suitable data if necessary.

1.   (*a*)   Explain synchronous type parallel data transfer techniques. [4]

     (*b*)   Draw 4K ROM interfacing with 8085 from 0000H.   [4]

     (*c*)   Explain SIM instruction of 8085 microprocessor.   [4]

                                    Or

2.   (*a*)   Explain the following instruction of 8085 microprocessor LDA
             3000 and LHLD 3000.   [4]

     (*b*)   Write down assembly language program for 8085 microprocessor
             to multiply two 8-bit numbers stored in memory location 4050H
             and 4051H. Store the result in 5000H and 5001H memory
             location.   [4]

(*c*) Explain the function of pins of 8085 : [4]

(*i*) IO/$\overline{\text{M}}$

(*ii*) ALEs.

3. (*a*) With the help of interfacing diagram, explain interface of ADC 0809 with 8085. [7]

(*b*) Draw the format of TMOD and TCON register. [6]

Or

4. (*a*) Explain mode 0 and mode 1 operation of 8255. [7]

(*b*) Draw and explain the internal RAM organization of 8051 micro-controller. [6]

5. (*a*) List the various addressing modes used in instruction set of 8051. Give an example of each. [6]

(*b*) Explain the following instructions : [6]

(1) DAA

(2) CJNE#08, NEXT

(3) POP 00H.

Or

6. (*a*) Write an assembly language program to find square of number stored at a location C000H external RAM and store the LSB of the result at C001H and MSB of the result at C002H. [6]

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(*b*) Explain steps to transfer data serially in 8051 and importance of Rl flag. [6]

7. (*a*) How is energy measured using 8085 ? Explain with block diagram. Draw the flowchart for the same. [6]

(*b*) Explain with interfacing diagram, speed measurement using 8051. [7]

Or

8. (*a*) Explain power factor measurement using 8085 with block diagram. [6]

(*b*) Draw and explain stepper motor control using 8051. [7]