Total No. of Questions—**8**] [Total No. of Printed Pages—**3**

Seat No.	

[4857]-1040

S.E. (Electrical) (II Sem.) EXAMINATION, 2015

FUNDAMENTALS OF MICROPROCESSOR AND MICROCONTROLLER

(2012 PATTERN)

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

N.B. **:—** (*i*) Answer any *one* question from Q. No. **1** *or* Q. No. **2**, Q. No. **3** *or* Q. No. **4**, Q. No. **5** *or* Q. No. **6**, Q. No. **7** *or* Q. No. **8**.

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

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

(*iv*) *All* questions carry equal marks.

(*v*) Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.

(*vi*) 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]

P.T.O.

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

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

(*i*) IO| $\overline{M}$

(*ii*) ALE

3. (*a*) With the help of interfacing diagram, explain interface of ADC0809 with 8085. [7]

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

Or

4. (*a*) List the operating modes of 8255. Draw control word format of I/O mode and BSR mode. [7]

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

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

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

(*i*) DAA

(*ii*) CJNE #08, NEXT

(*iii*) 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]

(*b*) Explain steps to transfer data serially in 8051 and importance of TI 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, temperature 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]