

Total No. of Questions—8]

[Total No. of Printed Pages—3

Seat No.	
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[5152]-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 four questions.

(ii) Neat diagrams must be drawn wherever necessary.

(iii) Figures to the right indicate full marks.

(iv) Your answers will be valued as a whole.

(v) Assume suitable data, if necessary.

1. (a) Explain the following instruction of 8085 microprocessor LDA 3000 and LHLD 3000. [4]
- (b) Draw 4K ROM interfacing with 8085 from 0000H. [4]
- (c) Explain the function of pins of 8085 : [4]
- (i) IO/\bar{M}
- (ii) T0(P3.4).

Or

2. (a) Explain asynchronous type parallel data transfer techniques. [4]

P.T.O.

(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 SIM instruction of 8085 microprocessor. [4]

3. (a) List the operating modes of 8255. Draw control word format of I/O mode and BSR mode. [7]
- (b) Explain the format of IE and IP registers with function of each bit. [6]

Or

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

(b) Explain the program status word in 8051. [6]

5. (a) Explain steps to transfer data serially in 8051 and importance of TI flag. [6]

(b) Explain the following instructions : [6]

(i) SWAPA

(ii) CJNE #08, NEXT

(iii) Push 00H.

[5152]-150

2

Or

6. (a) Write an assembly language program to find square of number stored at a location D000H external RAM and store the LSB of the result at D001H and MSB of the result at D002H. [6]
- (b) List the various addressing modes used in instruction set of 8051. Give an example of each. [6]
7. (a) Explain power factor measurement using 8085 with block diagram. [6]
- (b) Explain with interfacing diagram, temperature measurement using 8051. [7]
- Or
8. (a) How is energy measured using 8085 ? Explain with block diagram. Draw the flowchart for the same. [6]
- (b) Draw and explain stepper motor control using 8051. [7]