Total No. of Questions—**12**] [Total No. of Printed Pages—**4**

Seat No.	

[5057]-59

S.E. (Electrical) (Second Semester) EXAMINATION, 2016
MICROPROCESSOR FUNDAMENTALS AND APPLICATIONS
(2008 PATTERN)

Time : Three Hours **Maximum Marks : 100**

N.B. **:—** (*i*) Answer *three* questions from Section I and *three* questions from Section II.

(*ii*) Answers to the two sections should be written in separate answer books.

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

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

SECTION I

1. (*a*) Draw the architecture of 8085 microprocessor and explain it in brief. [10]

(*b*) What is "Addressing Mode" ? Explain the various addressing modes of 8085 microprocessor. [8]

Or

2. (*a*) What are flags ? What conditions do these flags indicate ? What is the necessity of the flag resister ? How the flag registers can be cleared ? [10]

P.T.O.

(*b*) Explain the function of the following Pins of 8085A chip : [8]

(*i*) S0 and S1

(*ii*) $\overline{RD}$ and $\overline{WR}$

(*iii*) HOLD and HLDA

(*iv*) RESET OUT and $\overline{RESET\ IN}$.

3. (*a*) Write a program to find the largest number of given ten numbers which are stored from memory 2000 H onwards. Store the result at 3000 H location. [8]

(*b*) What is stack ? Explain its use in the programming. [8]

Or

4. (*a*) Explain with timing diagram the operation of ALE and Ready signals. [8]

(*b*) What are the various hardware interrupts ? State their vector locations and priority in 8085. [8]

5. (*a*) Draw block diagram of 8251 and explain function of each block. [8]

(*b*) State various bus interface standards and explain in detail RS-232. [8]

Or

6. (*a*) Explain in detail various data transfer schemes. [8]

(*b*) Explain RS-232 standard in detail. [8]

SECTION II

7. (*a*) Draw and explain the functional block diagram of 8255 PPI. [8]

(*b*) Explain mode 0 and mode 1 operation of 8254. [8]

Or

8. (*a*) Draw functional block diagram of 8254 and explain function of each block. [8]

(*b*) List the operating modes of 8255. Give its control word format of I/O mode and BSR mode. [8]

9. (*a*) How energy is measured using 8085. Explain with block diagram. [8]

(*b*) With the help of interfacing diagram, explain interface of ADC0809 with 8085. [10]

Or

10. (*a*) Explain application of 8085 for measurement of voltage and current. [8]

(*b*) Draw DAC interfacing diagram with 8085 and write an assembly language program to generate sawtooth signal. [10]

11. (*a*) With the help of interfacing diagram, explain speed measurement using 8085. [8]

(*b*) With the help of interfacing diagram, explain application of 7 segment display using 8085. [8]

Or

12. (*a*) Draw interfacing diagram of stepper motor control using 8085. Write ALP to rotate stepper motor in forward direction. [8]

(*b*) With the help of interfacing diagram, explain flow measurement using 8085. [8]