Total No. of Questions—**12**] [Total No. of Printed Pages—**3**

Seat No.	

[4857]-206

S.E. (Comp.) (Second Semester) EXAMINATION, 2015
MICROPROCESSOR AND INTERFACING TECHNIQUES
(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.

(*v*) Assume suitable data, if necessary.

SECTION I

1. (*a*) Draw and explain programmers model of 8086. [8]

(*b*) Explain the flag register of 8086 in detail. [8]

Or

2. (*a*) Explain with diagram memory segmentation of 8086 in detail. [8]

(*b*) Compare memory mapped I/O and I/O mapped I/O. [8]

3. (*a*) Explain the different addressing modes of 8086 with *one* example each. [8]

(*b*) Explain all rotates instruction with example. [8]

P.T.O.

Or

4. (*a*) Explain the following instructions for 8086 : [8]

(*i*) CALL

(*ii*) RAR

(*iii*) CMPS

(*iv*) PUSHF.

(*b*) Write an 8086 ALP to add two 8-bit BCD numbers. Write appropriate comments. [8]

5. (*a*) Compare .com files and .EXE files. [8]

(*b*) What is TSR ? Explain the structure of TSR in detail. [10]

Or

6. (*a*) Draw and explain the block diagram of 8259. [10]

(*b*) What is IVT of 8086 ? Explain its structure in detail. [8]

SECTION II

7. (*a*) Draw a block diagram of 8255 PPI. [8]

(*b*) Interface a typical 8-bit DAC with 8255 and write a program to generate staircase wave form. [8]

Or

8. (*a*) Draw and explain 8251 block diagram. [8]

(*b*) With the help of timing diagram explain the 8255 group A in mode 1, input mode. [8]

9. (*a*) Draw and explain 8253 block diagram. [8]

(*b*) Explain different I/O modes available in 8279. [8]

Or

10. (*a*) Draw and explain the complete interface diagram between 8086 and 8279 with 4 × 4 keyboard matrix. [8]

(*b*) Explain the various modes of 8237. [8]

11. (*a*) Draw and explain minimum mode configuration of 8086 microprocessor. [10]

(*b*) Draw and explain 8087 NDP. [8]

Or

12. Design a 8086 based system with the following specifications : [18]

(*i*) 8086 working with 10 MHz at maximum mode

(*ii*) 32 kB EPROM using 16 kB device

(*iii*) 256 kB RAM using IC 62512.

Draw memory map and show the decoding.