

Total No. of Questions : 12]

SEAT No. :

P1396

[Total No. of Pages : 3

[4858] - 158

T.E. (Electronics)

Microcomputer Based System

(2008 Pattern) (Semester - II)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6 from section-I and Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12 questions from section-II.*
- 2) Answers to the two sections should be written in separate books.*
- 3) Neat diagrams must be drawn wherever necessary.*
- 4) Assume suitable data, if necessary.*

SECTION - I

- Q1)** a) Draw flag structure of 8086 processor & explain operation of each flag. [8]
- b) Explain the function of following pins. [10]
- i) ALE
 - ii) $\overline{MN}/\overline{MX}$
 - iii) READY
 - iv) HOLD
 - v) $\overline{M}/\overline{IO}$

OR

- Q2)** a) Draw & explain architecture of 8086. [10]
- b) List different addressing modes of 8086 & explain any three. [8]

P.T.O.

- Q3)** a) Explain the following instructions. [8]
- i) JMP
 - ii) CLC
 - iii) ROL
 - iv) MOVS
- b) Write an ALP to find sum of numbers in an array of 15 bytes. Draw flow chart. [8]

OR

- Q4)** a) Draw the interrupt vector table and explain the concept of interrupt vector for 8086 processor. [8]
- b) List string manipulating instructions and explain any three. [8]
- Q5)** a) Draw & explain register set of 80386 & explain a typical function of each of the register in brief. [8]
- b) Draw and explain paging operation in 80386 using page directory & page table. [8]

OR

- Q6)** a) Draw & explain the structure of 80386 descriptor. [8]
- b) What are the modes of operation of 80386? Explain any two modes of operation. [8]

SECTION - II

- Q7)** a) Explain with block diagram IBM PC system based mother board. [8]
- b) Write short note on : (any two) [8]
- i) BIOS
 - ii) Serial port
 - iii) PS/2

OR

- Q8)** a) Enlist and describe the different data type in USB. [8]
- b) Give the specifications of PCI Bus & compare it with EISA Bus. [8]

- Q9)** a) Explain with suitable diagram dataflow model of ARMV. [8]
b) State and explain various operating modes of ARMV. [8]

OR

- Q10)** a) List and explain register structure of ARM core. [8]
b) Explain the following instructions of ARMV. [8]
i) B ii) LDR
iii) MLA iv) AND

Q11) Design 8086/ARMV based two channel data acquisition system to measure parameters like pressure & temperature. Pressure range is 0 to 5 bar & temperature range is 0 to 100 °C. Display these parameters on LCD. [18]

- Explain important design steps
- Selection criteria of component
- Design suitable signal conditioning circuitary
- Draw complete interfacing diagram.
- Draw necessary flow chart.

OR

- Q12)** a) Draw the block diagram of Data Acquisition system & explain in brief various steps involved in designing data acquisition system. [10]
• Selection of sensor
• Design of signal conditioning circuit
• Selection of ADC
• Selection of processor
b) Design 8086/ARMV based path follower using DC motor. [8]
• Draw appropriate interfacing circuitary.
• Explain the important design steps.

