Total No. of Questions : 12]

SEAT No. :

P2331

[Total No. of Pages : 4

[4758]-66

T.E. (Electronics)

MICROCOMPUTER BASED SYSTEM

(2008 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks :100*

Instructions to the candidates:

1) ***Answer 3 questions from section -I and 3 questions from section - II.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Explain the architecture of 8086 microprocessors with suitable block diagram. **[10]**

b) Explain following addressing modes with suitable example. **[8]**

i) Immediate

ii) Direct

iii) Register indirect

iv) Register Relative

OR

Q2) a) Draw and explain interaction between 8087 coprocessor and 8086 microprocessor. **[8]**

b) Explain the functions of following pins. **[10]**

i) ALE

ii) READY

iii) NMI

iv) INTR

v) MN/$\overline{MX}$

P.T.O.

Q3) a) Explain the following instructions with suitable example. **[8]**

i) RCL

ii) INT N

iii) JP

iv) CMPS

b) Write an ALP to display the message "HAPPY NEW YEAR 2015" on the computer screen. **[8]**

OR

Q4) a) Draw the interrupt vector table. Explain the conditions which causes 8086 to perform following interrupts. **[8]**

i) Type 0

ii) Type 1

iii) Type 2

iv) Type 3

b) Write an ALP to find out smallest number from a given unordered 10 bytes of array stoned in the location starting from known address 4000: 5000H. **[8]**

Q5) a) Draw and explain architecture of 80386 processor. **[8]**

b) Draw and explain the structure of 80386 discriptor. **[8]**

OR

Q6) a) Explain the multitasking concept in 80386 processor with the help of TSS and TR. **[8]**

b) With the help of suitable figure explain the translation look-aside buffer (TLB) to speed up the paging operation. **[8]**

SECTION - II

Q7) a) Describe with block diagram typical pentium motherboard. **[10]**

b) State and explain features of USB interface. Enlist the different transfer types in USB interface. **[8]**

OR

Q8) a) Write a short note on **[10]**

i) Serial port

ii) Parallel port

b) With the suitable block diagram explain the PCI bus interface to the PC. **[8]**

Q9) a) What is the role of Barrel shifter. List different Barrel shifter operations carried out in ARM core. **[8]**

b) Draw & explain the instruction of ARM core with example. **[8]**

i) LDRBT

ii) SBC

iii) TST

iv) SWI

OR

Q10)a) Explain register model of ARM 7. **[8]**

b) Explain the following software interrupt exceptions for ARM processor. **[8]**

i) Interrupt request

ii) Fast interrupt request

iii) Data abort

iv) Prefetch abort

Q11) Draw interfacing diagram for 8086/ARM 7 based electronic weighing machine and discuss following design issues: **[16]**

a) Foundation and mechanical structure desing.

b) Load cell selection.

c) Signal conditioning.

d) Flow chart.

OR

Q12) Design 8086 / ARM 7 based closed loop control circuit for DC motor using PWM control. **[16]**

a) Draw the complete interfacing diagram.

b) Explain important design steps.

c) Draw flowchart.

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