Total No. of Questions : 12]

SEAT No. :

P2923

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T.E.(Electronics Engineering)

MICROCOMPUTER BASED SYSTEMS

(2008 Course) (Semester-II)

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

Instructions to the candidates:

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

SECTION-I

Q1) a) State functional units does 8086 contains. Draw and explain them in brief. **[10]**

b) Explain the function of following pins. **[8]**

i) READY ii) TEST

iii) MIN/$\overline{\text{MAX}}$ iv) BHE

OR

Q2) a) With suitable example explain any five addressing modes of 8086. **[10]**

b) Explain the concept of memory segmentation and show how 20 bit physical address is generated in 8086 processor using 16 bit registers.**[8]**

Q3) a) Explain the following instructions **[8]**

i) PUSH ii) JMP

iii) XCHG iv) DAA

b) Write an ALP for 8086 to find out number of positive and negative numbers in series **[8]**

OR

P.T.O.

Q4) a) Draw and Explain interrupt responce sequence of 8086 processor. **[8]**

b) Write an ALP of 8086 to display the message 'SPPU' on the computer screen **[8]**

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

b) Draw and explain register set available for programmers use in 80386 processor. **[8]**

OR

Q6) a) Draw and Explain structure of descriptors supported by 80386. **[8]**

b) Write short note on(any two). **[8]**

i) Virtual mode ii) Protected mode

iii) Real mode.

SECTION-II

Q7) a) Explain with block diagram IBM PC system based mother board. **[10]**

b) Write a short note on. **[8]**

i) BIOS ii) PS/2

OR

Q8) a) Explain with respect to USB: **[10]**

i) Endpoint

ii) Enumeration

iii) Different types of data transfer

b) Explain serial communication standard RS 232C. **[8]**

Q9) a) Draw and explain data flow model of ARM core. **[8]**

b) Draw and Explain programmers model of ARM processor. **[8]**

OR

Q10) a) Explain following ARM instructions **[8]**

i) LDR R0, [R1], # 4

ii) MOV R2, R3, LSL # 2

iii) MLA R0, R1, R2, R3

iv) AND R0, R1, R2

b) With the help of Block diagram Explain three stage and five stage pipeline instruction execution in ARM7. **[8]**

Q11) Design and electronic weighing bridge system using 8086 processor **[16]**

i) Design signal conditioning circuit

ii) Draw complete interfacing diagram.

iii) Draw the flowchart.

OR

Q12) Design data acquisition system using 8086/ARM7 with following specification **[16]**

i) Temperatures sensor LM-35

ii) LCD display

iii) Programmable keyboard.4×4

iv) Load controlled 100 W

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