Total No. of Questions : 12]

SEAT No. :

P1631

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T.E. (Electronics Engineering)

MICROCOMPUTER BASED SYSTEM

(2008 Course) (Semester - II) (304209)

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

Instructions to the candidates:

1) ***Answers the Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12.***
2) ***Answer any three questions in each section.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***
5) ***Use of Calculator is allowed.***
6) ***Assume suitable data, if necessary.***

SECTION - I

Q1) a) Draw and explain 8086 processors architecture in detail. **[8]**

b) Explain different addressing modes in 8086 processors. **[8]**

OR

Q2) a) Draw and explain with suitable interface diagram, the maximum mode operation of 8086 system. **[8]**

b) Draw a flag structure of 8086 processor and explain operation of each flag. **[8]**

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

i) AAD ii) CBW

iii) IDIV iv) JCXZ

b) Write a 8086 program to find out given string is palindrome or not? **[8]**

OR

Q4) a) Write a 8086 program to search a number in given string of 40 bytes at 8000H location. **[8]**

b) State difference between software and hardware interrupts. Explain the action taken by processor to service these interrupts with example. **[8]**

P.T.O.

Q5) a) Draw and explain the register set of 80386 and explain in brief a typical function of each of the registers. **[8]**

b) What is paging in 80386? How paging is controlled through control registers? **[10]**

OR

Q6) a) What do you mean by descriptor tables? Explain how physical address is calculated using descriptors in GDT and selectors? **[8]**

b) Write a short note on protected mode and virtual mode of 80386. **[10]**

SECTION - II

Q7) a) Draw interfacing diagram and explain communication between centronics printer and parallel port with the help of timing diagram. **[8]**

b) What is branch prediction? How it is implemented in Pentium processors? **[8]**

OR

Q8) a) Describe the interface between USB host and USB device. List the features of USB. **[8]**

b) Write in detail buses found on the Pentium motherboard. **[8]**

Q9) a) Describe the need of Thumb mode of ARM? How ARM and Thumb modes are switch. **[8]**

b) Explain the following instructions for ARM7: **[6]**

i) MLA R0, R1 , R2, R3

ii) ANDS r0, r1, r2,

iii) LDMIA R0!, {R1-R3}

c) What is the significance of PINSEL0 and PINSEL1 registers. **[4]**

OR

Q10)a) Draw and explain ARM Programmers model in detail. **[8]**

b) What are privileged and non-privileged modes of operation of ARM processor? **[6]**

c) What is significance of special purpose registers r13, r14, r15? **[4]**

Q11)Design 16 channel data Acquisition system using 8086 with following specifications **[16]**

a) Sensors temperature - PT 100.

b) LCD Display.

c) Limits Programmable using 4 × 4 keypad.

Draw complete interfacing diagram and flow chart. Explain important design steps required.

OR

Q12)Design an electronic weighing bridge system using 8086 processor: **[16]**

a) Design signal conditioning circuit.

b) Show complete interfacing diagram.

c) Write flowchart for the same.