Code: 15A04407 **R15**

B.Tech II Year II Semester (R15) Regular Examinations May/June 2017

MICROPROCESSORS & INTERFACING

(Computer Science & Engineering)

Time: 3 hours Max. Marks: 70

PART - A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) List four categories of 8085 instructions that are used for data manipulation.

(b) How many memory locations can be addressed by a microprocessor with 14 address lines?

(c) What is the difference between the short and near jumps in 8086?

(d) Define macro. Give an example.

(e) What is the memory address space in 8086?

(f) Write the different forms of the IN instruction in 8086.

(g) Compare serial and parallel communications.

(h) List the various operating modes of the 8253.

(i) What does a '0' in the zero flag after an arithmetic operation mean?

(j) Where are the registers R0-R7 located in the 8051 microcontroller?

PART - B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT - I

2 Draw and explain the register organization of the 8086 and explain typical applications of each register.

OR

3 (a) How are clock signals generated in the 8085? What is the frequency of the internal clock? Explain.

(b) Compare the instruction CALL and PUSH.

UNIT - II

4 Explain the functions of the assembler directives PTR, TYPE, SHORT, GLOBAL and LOCAL with examples for each.

OR

5 (a) Discuss the function of the LOCK prefix used with an 8086 instruction.

(b) Describe the different program memory addressing modes in the 8086 giving an example for each.

UNIT - III

6 Draw a circuit showing the generation of I/O read and write control signals in the minimum mode operations of the 8086.

OR

7 (a) Discuss techniques for developing programs to handle operations of I/O devices.

(b) Explain the functions IC 74244 and IC 74245.

UNIT - IV

8 Draw a block diagram of the 8259 and explain how it can be used for increasing the interrupting capabilities of the 8086.

OR

9 (a) Find BSR control words for setting PC4 pin and resetting PC2 pin in the 8255.

(b) Discuss the different modes of operation in the 8237.

UNIT - V

10 (a) Why microcontrollers are often called single chip computers? Explain.

(b) Write a program to arrange a block of binary numbers in ascending order.

OR

11 Explain interfacing of push button switches and LEDs with the 8051 microcontroller.

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