

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)

- 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.