Code: 13A04507

R13

B.Tech III Year I Semester (R13) Supplementary Examinations June 2017

MICROPROCESSORS & INTERFACING

(Common to CSE & IT)

Time: 3 hours Max. Marks: 70

PART - A

(Compulsory Question)

*****

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

(a) Mention the function of the instruction ADD M of 8085 microprocessor.

(b) What is the function of the ALE line in 8085 microprocessor?

(c) Write the function of the instruction STC 8086.

(d) Mention the instructions used to perform stack operations in 8086.

(e) Name the hardware interrupt pins of 8086 microprocessor.

(f) Give the difference between logical address and physical address in 8086.

(g) What is the use of the data bus buffer in 8253 IC?

(h) List the features of the 8255 PPI IC.

(i) Mention two single bit instructions of 8051 with their function.

(j) Which ports of 8051 can be combined to form a 16 bit address for external memory access?

PART - B

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

UNIT - I

2 (a) Explain with examples data transfer instructions of 8085.

(b) Explain the function and components of the execution unit of 8086 microprocessor.

OR

3 (a) Explain the need for memory segmentation and segment registers of 8086 microprocessor.

(b) An 8085 microprocessor executes the following instructions as

MVI A, 89 H
MVI B, 74 H
ORI 40 H
SUB B

Evaluate the contents of the accumulator and B register after execution.

UNIT - II

4 Describe the register, indexed and base relative addressing modes of 8086 with example instructions.

OR

5 (a) Explain the instructions used to perform program execution transfer in 8086.

(b) 8 data bytes are stored in memory locations E000H to E007H. Write an assembly language program for 8086 microprocessor to transfer the block of data to a new location B001H to B008H.

UNIT - III

6 (a) Explain the steps involved in execution of software interrupts in 8086.

(b) Explain the types of software interrupts of 8086.

OR

7 With diagram, explain the interfacing of a printer with 8086 microprocessor.

Contd. in page 2

UNIT - IV

8 Explain the basic process and the sequence of events for direct memory access data transfer using 8237 DMA controller.

OR

9 Describe the interfacing of a seven segment display for a 8086 system.

UNIT - V

10 (a) Explain briefly serial communication modes in 8051.

(b) Explain the function of the timers of 8051.

OR

11 Describe with diagram, the interfacing of seven segment display with 8051 microcontroller.

*****

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)

*****

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.

*****

Code: 13A04507

R13

B.Tech III Year I Semester (R13) Regular & Supplementary Examinations November/December 2016

MICROPROCESSORS & INTERFACING

(Common to CSE & IT)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

*****

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

(a) Explain the function of Auxiliary carry flag and Sign flag of 8085.

(b) Describe function of ALE signal of 8085.

(c) Identify the addressing mode of following instructions:
(i) MOV [BX +2400], AL (ii) MOV CX, [BX+SI+ 2500]

(d) Explain the use of PUSH & POP instructions of 8086

(e) How to enable and disable interrupts in 8086?

(f) Explain how BIOS routines can be called with INT instruction.

(g) Compare synchronous and asynchronous data transfer.

(h) Write control word format of 8255.

(i) Explain any one power saving options supported by 8051.

(j) How are the bits of registers PSW affected if we select Bank 2 of 8051?

PART – B

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

UNIT – I

2 Draw and explain Architecture of 8085.

OR

3 Describe functions of following signals of 8086 microprocessor:
(a) RESET. (b) BHE. (c) DT/R. (d) TEST.

UNIT – II

4 Describe addressing modes of 8086 with suitable examples.

OR

5 Describe following instructions of 8086 with examples:
(a) DEC. (b) CBW. (c) DAA. (d) LOOP.

UNIT – III

6 What is the difference between DOS calls and Bios calls? Illustrate with suitable examples.

OR

7 Interface 8K word of EPROM (2764) as well as RAM (6264) to 8086 using 3:8 decoder (74138). Select EPROM address as FC000H and RAM address 1C000H.

UNIT – IV

8 What is DMA? How 8237 handles data transfer in DMA operation?

OR

9 Draw and explain the functional block diagram of 8253 timer. Write control word format for 8253.

UNIT – V

10 Explain memory organization of 8051 microcontroller in detail.

OR

11 What are SFRs in 8051 microcontroller? Explain TCON and TMOD registers.

*****

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)

*****

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.

*****

Code: R7310504

R07

B.Tech III Year I Semester (R07) Supplementary Examinations June 2016

MICROPROCESSORS & INTERFACING

(Common to CSE, IT and ECC)

Time: 3 hours Max. Marks: 80

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Bring out the differences between procedures and macros with relevant examples.
(b) Discuss briefly about the need for assembler directives with examples.

2 (a) Write an ALP in 8086 to add five 8 bit numbers and the result is 16 bit.
(b) Write an ALP in 8086 to find the larger of two numbers.

3 (a) Draw the pin diagram of 8086 in maximum mode of operation and explain briefly about the function of each pin.
(b) Explain the need for DMA. Discuss in detail about DMA data transfer method.

4 (a) Draw the internal architecture of 8255 and explain about each block.
(b) With a neat diagram, explain how a key board is interfaced using 8255.

5 (a) Discuss briefly about 8259A system connections and cascading.
(b) Write short notes on BIOS interrupt functions.

6 (a) Draw and discuss the asynchronous mode transmitter and receiver data formats of 8251.
(b) What is the difference between UART and USART?

7 (a) Draw and discuss the structure of an 80386 descriptor.
(b) Briefly explain the enhanced instruction set of Pentium.

8 (a) Draw and discuss the flag register of 8051.
(b) Discuss briefly about external program memory of 8051.

*****