

Enrolment Number: _____

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B. TECHMIDSEM EXAMINATION WINTER 2022-23

SUBJECT NAME (CODE): Computer Organization and Microprocessor Architecture. (203124209)

BRANCH: AI/BDA/BC/CC/CS/IOT

DATE: 8.8.2022

TIME: 2:30 PM to 4:00 PM

TOTAL MARKS: 40

Sr.No.

Marks

Q.1 (A) Compulsory Question (5 MCQ)

1. 8085 has _____ address bit.

- a. 4 b. 3 c. 8 d. 16

210303108081

05

210303108110

(28/40)
11190

2. Total number of Pins in 8085 are _____.

- a. 40 b. 32 c. 20 d. 16

210303108139

9

3. MOV A, B is a _____ byte instruction.

- a. 1 Byte b. 3 Byte c. 2 Byte d. None

4. LXI H, 2048H is a _____ byte instruction.

- a. 1 Byte b. 3 Byte c. 2 Byte d. None

5. Which among these is a non-vectored Interrupt.

- a. INTR b. INTA c. RST 4.5 d. RST 7.5

05

(B) Compulsory Question

1. Define: Opcode and Operand.

2. ALE is used to perform arithmetic and logical function. (TRUE/FALSE)

~~True~~ ~~false~~

3. In LDA 5041H instruction, LDA is Opcode and 5041H is Operand.

4. What is Microprocessor?

5. Define: T-state.

each of 3 M

Q.2 Attempt any four(Short Questions)

12

(1) Describe: LDA, STA and MVI instruction with example.

(2) Explain classification of Addressing mode.

(3) What is Address Bus, Data Bus and Control Bus.

(4) What is a memory? Give difference of static and dynamic RAM

(5) Draw and explain Flag register?

LDA 3041H 3041 → +5
3042 → 43

Q.3 Attempt any two

08

(1) Write a program to add two 8 bit of data F5H & 43H stored in memory location 3041H & 3042H.

(2) What is Interrupt? Describe function of each interrupt.

(3) Draw and explain programmable model of 8085.

101001,
010011

-1 01110005 ??
2-X

Q.4 (A) Draw Architecture of 8085 microprocessor.

8.

(B) Draw interfacing of EPROM of 4Kbyte and RAM of 6Kbyte with 8085 using the decoder. Also find its starting and ending address of EPROM & RAM.

OR

(B) Draw the timing diagram of MVI A, 06H Instruction.

05

1 = d all of answer

2. b. 111100

3. a 100010110111

4. d AB

5. a 1101 8 ??

3041 15 FS
 ↓ ↓ ↓
 1111 0101 1011

1. $A + B + C = M_0$.

2. TTL

3. ~~for 8085~~ 16

4. 7400

5.

7 \Rightarrow 90 SO.

5 \Rightarrow ~~65~~ 50

3rd \Rightarrow ~~42~~ 35

1st \Rightarrow 135

1. 101
9999 99
3405.65
6594.34
2. 6544.75

X 584
333
117
↓
1000 1011 0111

+ 23
80

23
520
11320
11801

→ Rangoli colors
→ Balloon / Ribbons
→ 8 newly to drive

Enrolment Number: _____

**PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.TECH MIDSEM EXAMINATION WINTER 2021-22**

SUBJECT NAME (CODE): Computer Organization and Microprocessor Architecture (203124209)

BRANCH: AI/BDA/BC/CC/CS/IOT

DATE: 08.08.2022

TIME: 2:30 PM to 4:00 PM

TOTAL MARKS: 40

Sr.No.	Marks
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Q.1 (A) Compulsory Question (5 MCQ) 05

1) How many output pins an 8085 microprocessor includes?

- a) 16
- b) 40
- c) 20
- d) 64

2) Which of the following 16-bit register is for 8085?

- a) Accumulator
- b) Register C
- c) Stack pointer
- d) Register

3) How many address lines are present in 8085 microprocessors?

- a) 16
- b) 20
- c) 32
- d) 40

4) Which of the following is the correct sequence of operations in a microprocessor?

- a) Opcode fetch, memory read, memory write, I/O read, I/O write
- b) Opcode fetch, memory write, memory read, I/O read, I/O write
- c) I/O read, opcode fetch, memory read, memory write, I/O write
- d) I/O read, opcode fetch, memory write, memory read, I/O write

5) LXI H,2000H

MVI M,32H

HLT

.....is the contains of 2000h memory location.

- (a) 20H
- (b) 32H
- (c) 00H
- (d) None of above

05

(B) Compulsory Question (5 Fill in the Blanks)

- 1) What is an Assembler?
- 2) ALE stands for _____.
- 3) What is Mnemonics?
- 4) XCHG stands for _____.
- 5) When pins S0=1 and S1 =1, then HALT operation is performed. TRUE/FALSE.

Q.2 Attempt any four(Short Questions)

12

(1) Difference between microprocessor and microcontroller.

(2) Explain following terms.

- (i) 1 byte, 2 bytes and 3 bytes instructions
- (ii) Define opcode and operand using one instruction

(3) Explain following instructions.

- (i)SHLD 2000H
- (ii)CMP B (Write Conditions)
- (iii)INX B

(4)Define: Low level language, medium language, high level language.

(5)Draw and explain function of flag register in 8085.

Q.3 Attempt any two

08

(1) Draw timing diagram of instruction MOV B, C.

(2) Explain all addressing modes of 8085 with examples.

(3) Draw Programming model of 8085.

Q.4 (A) Draw pin diagram of 8085 microprocessor and explain any five pins.

05

(B) Design memory interfacing circuit for the 8085 microprocessor for a given 8Kbyte EPROM and 4Kbyte of RAM with starting addresses 0000H and 6000H respectively.

05

OR

(B) Write a program of 8085 to multiply two 8 bit numbers and store result in 2050H memory location.

05

Enrollment No.: _____

PARUL UNIVERSITY
Faculty of Engineering & Technology
B Tech Examination

Subject Name: COMA

Subject Code: 203124209

Branch/Semester: AI/BD/IOT/CS /3rd semester

[Date: 02/08/2021] [Time: 10:00AM to 11:30AM] [Total Marks: 40]

Sr.No.	Marks
Q.1	05
(A) Multiple Choice Questions	
1. 8085 instruction that is equivalent to the non-existent instruction "LDAX H" is	
(A) LDAX C (B) LDAX D (C) LDAX B (D) none of these	
2. How many machine cycle of LDA 2050?	
(A) 3 (B) 4 (C) 1 (D) 7	
3. Suppose that the stack pointer (SP) of 8085 contains 2004H. After execute the instruction "PUSH PSW", what will be the value of SP?	
(A) 2002H (B) 2000H (C) 2006H (D) 2008H	
4. How many times the following loop is executed?	
MVI C,17H	
LOOP:DCR C	
JNZ LOOP	
(A) 23(B) 17 (C) 21 (D)Infinite	
5. How many bytes does the following set of instructions occupy?	
MVI A, 35H	
MVI B, 23H	
ADD B	
(A) Three bytes (B) Six bytes (C) Five bytes (D) Four bytes	
(B) Fill in blanks	05
1. _____ addressing mode of MOV A, M.	
2. The crystal frequency require for an 8085 system to operate at 1.1MHz is	
3. _____ number of memory chips needed to design 8KB of memory if the memory chip size is 1024 x 1.	
4. Suppose A=45H after ADI 3FH, _____ will be the value of flag register.	
5. Suppose A=AAH, _____ will be the value of Accumulator after RLC.	
Q.2	12
Attempt any four(Short Questions)	
(1)Explain Flag Register of 8085 Microprocessor.	
(2) Draw the interfacing circuit diagram of a 2K EPROM interface with 8085 microprocessor.	
(3) Describe any three addressing modes of 8085 microprocessor with examples.	
(4)Explain the use following pins of 8085.READY , HOLD ,INTA	
(5) Explain Jump instruction.	
Q.3	08
Attempt any two	
(1)Write the size of instruction, machine cycle and T-state of following instructions.	
MVI A,56H	
XCHG	

Enrollment No.: _____

PARUL UNIVERSITY
Faculty of Engineering & Technology
B Tech Examination

Subject Name: COMA

Subject Code: 203124209

Branch/Semester: AI/BD/IOT/CS /3rd semester

[Date: 02/08/2021] [Time: 10:00AM to 11:30AM] [Total Marks: 40]

LHLD 2050H

RLC

(2) Write comparison between microprocessor and microcontroller.

(3) Explain Rotate Instruction

- Q.4 (A) Draw the functional block diagram of 8085 microprocessor IC 05
(B) Calculate the time required to execute the following two instructions. 05
(Assume: The Microprocessor operate with 2MHz clock).

MOV C, B

LDA 2050H

MVI B, 5BH

LHLD 2050

OR

- (B) Explain the instruction stepwise when the following program is executed: 05

MVI A, data

ADI 72H

JC Display

STA 2500H

HLT

Display: XRA A

STA 2500H

HLT

What will be the contents of memory location 2500H if data is (i) 8FH (ii)

0FH

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech., Summer 2017-18 Examination

Semester: 4

Subject Code: 03107257

Subject Name: Microprocessor

Date: 18/05/2018

Time: 10:30 am to 1:00 pm

Total Marks: 60

Instructions:

1. All questions are compulsory.
 2. Figures to the right indicate full marks.
 3. Make suitable assumptions wherever necessary.
 4. Start new question on new page.

Q.1 Objective Type Questions (All are compulsory) (Each of one mark)

B) Explain the following instruction with example (Each of two marks)

- (1) LDAX (2) DAA (3) PUSH (4) XTHL

(08)

OR

B) 1. Write a program to reset AC flag without affected other flags.

(08)

2. Write a program to find maximum no from given two numbers.

2050H	45H
2051H	FFH

Q.4 A) 1. Write a program to sort data in ascending order.

(07)

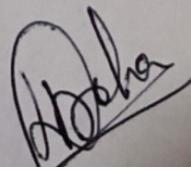
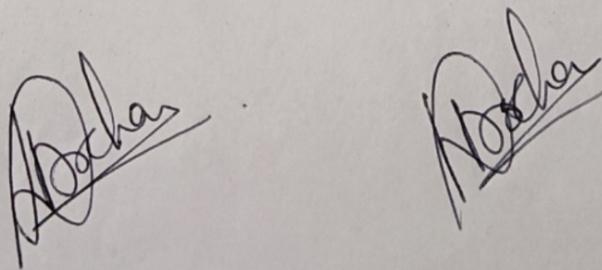
2. Write a set of instructions to alter the contents of flag register in 8085.

OR

A) Draw and explain architecture of 8086 microprocessor?

(07)

B) Interface 8KB of ROM and 8KB of RAM with microprocessor 8085. Assume the starting address is to be 0000H.



Seat No:

Enrollment No: _____

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech., Winter 2017 - 18 Examination

Semester: 4
Subject Code: 03107257
Subject Name: Microprocessors

Date: 08/01/2018
Time: 10:30 am to 1:00 pm
Total Marks: 60

Instructions:

- I. Instructions:**

 1. All questions are compulsory.
 2. Figures to the right indicate full marks.
 3. Make suitable assumptions wherever necessary.
 4. Start new question on new page.

Q.1 Objective Type Questions.

Q.2 Answer the following questions. (Attempt any three)

- A) What is the difference between microprocessor and microcontroller?
B) Explain different types of flags in 8085 microprocessor.
C) Draw timing diagram of IN instruction.
D) Draw and explain 8086 architecture.

Q.3 A) Find the square of the given numbers from memory location 6100H and store the result to memory location 7000H.

- B). Explain the paging mechanism in an 80386 microprocessor.

(27)

OR

- B) WAP to exchange the contents of memory locations 2000H and 4000H

(08)

Q.4 A) Explain 8255 block diagram.

Q1B

- A) Write a program to sort given 10 numbers from memory location 2200H in the ascending order (07)
 B) Draw and explain with example OUT instruction (08)

Seat No. _____

Enrollment No. _____

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech., Summer 2016 - 17 Examination

Semester: 4th
Subject Code: 03107257
Subject Name: Microprocessors

Date: 29-05-2017
Time: 10AM to 1PM
Total Marks: 100

Instructions:

1. Attempt all questions from each section.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Write section-A, section-B on separate answer sheets.

SECTION: A

- Q:1 (a) Draw the functional block diagram of internal architecture of 8085. (05)
Q:1 (b) Differentiate between Microprocessors and Microcontrollers. (05)
Q:2 (a) Draw the timing diagram of the instruction: LDA 2000H. Explain all the stages of instruction execution. (07)
Q:2 (b) Draw an interfacing diagram to connect 8 DIP switches through input port with address F0H and 8 LEDs through output port with address F5H with 8085 microprocessor. (07)

OR

- Q:2 (b) Draw the interfacing of a 2K EPROM having an ending address 2FFFH with 8085 microprocessor. Use de-multiplexed address/data lines and 3-to-8 decoder (74LS138). (07)
Q:3 (a) Explain following instructions with an example. LHLD, RRC, XTHL, LXI (07)
Q:3 (b) Write an 8085 assembly language program to count the number of bytes that are greater than 40_{10} and lesser than 50_{10} from an array of twenty bytes stored on memory locations 2000H onwards. Store such numbers on memory locations 2100H onwards. (06)

OR

- Q:3 (b) Write an 8085 assembly language program to copy only even numbers from an array of ten bytes stored on memory location 2300H to memory location 2400H. (06)
Q:4 (a) Write a set of 8085 assembly language instructions to generate a 1 second delay, if the crystal frequency is 1 MHz. (07)
Q:4 (b) Define the concepts of stack and subroutine. Explain the PUSH and POP instructions of an 8085 microprocessor with example. (06)

SECTION: B

- Q:1 (a) Describe various addressing modes of 8085 microprocessor with examples. (05)
Q:1 (b) Write an 8085 assembly language program to convert a binary number to BCD. (FFH to 255_{10}) (05)
Q:2 (a) State the difference between vectored and non-vectored interrupts. Explain vectored interrupts of 8085 microprocessor. (07)
Q:2 (b) Explain the SIM instruction of an 8085 microprocessor. (06)

OR

- Q:2 (b) Differentiate between the hardware and software interrupts. How many such interrupts are available in 8085 microprocessor? (06)

- Q:3 (a) Explain the block diagram of 8259- Programmable Interrupt Controller. (07)
Q:3 (b) Draw architecture of 8086 and explain in brief. (06)

OR

- Q:3 (b) Explain the following pins of an 8086 microprocessor: BHE, RQ/ GT0, MN/ \overline{MX} (06)
Q:4 (a) Differentiate between the real mode and protected mode of an 80286 microprocessor. (07)
Q:4 (b) Explain the paging mechanism in an 80386 microprocessor. (07)