Printed Page:-

Subject Code:- ACSE0405

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: IV - CARRY OVER THEORY EXAMINATION - SEPTEMBER 2022

Subject: Microprocessor

Time: 3 Hours

Max. Marks: 100

General Instructions:

1. The question paper comprises three sections, A, B, and C. You are expected to answer them as directed.
2. Section A - Question No- 1 is 1 mark each & Question No- 2 carries 2 mark each.
3. Section B - Question No-3 is based on external choice carrying 6 marks each.
4. Section C - Questions No. 4-8 are within unit choice questions carrying 10 marks each.
5. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION A 20

1. Attempt all parts:-

1-a. Which of the following is true about microprocessors? (CO1) 1

(a) It has an internal memory

(b) It has interfacing circuits

(c) It contains ALU, CU, and registers

(d) It uses Harvard architecture

1-b. Which of the following circuit is used as a special signal to demultiplex the address bus and data bus? (CO1) 1

(a) Priority Encoder

(b) Decoder

(c) Address Latch Enable

(d) Demultiplexer

1-c. In 8085, HLT opcode means: (CO2) 1

(a) Remain idle for 10 seconds

(b) Remain idle for 0.1 seconds

(c) End of Program

(d) none of above

1-d. In 8085, the DAA instruction is used for (CO2) 1

(a) Direct Address Accumulator

(b) Double Add Accumulator

(c) Decimal Adjust Accumulator

(d) Direct Access Accumulator

1-e. The largest two digit hexadecimal number is _____ (CO3) 1

(a) (FE)16

(b) (FD)16

(c) (FF)16

(d) (EF)16

1-f. A three digit decimal number requires _____ for representation in the conventional BCD format. (CO3) 1

(a) 3 bits

(b) 6 bits

(c) 12 bits

(d) 24 bits

1-g. The 8085 microprocessor has two instructions for data transfer between the processor and the I/O devices. (CO4) 1

(a) Rx & Tx

(b) DIN & DOUT

(c) IN & OUT

(d) MVI & STA

1-h. Which of the following is not one of the types of buses? (CO4) 1

(a) Control bus

(b) Databus

(c) Address bus

(d) Utility bus

1-i. How many address lines are present in 8086 microprocessor? (CO5) 1

(a) 16

(b) 20

(c) 32

(d) 40

1-j. Which are the part of architecture of 8086? (CO5) 1

(a) The bus interface unit

(b) The execution unit

(c) Both a and b

(d) None of these

2. Attempt all parts:-

2.a. What is Microprocessor? (CO1) 2

2.b. Give the differences between JZ and JNZ. (CO2) 2

2.c. Write down the advantages of Subroutine. (CO3) 2

2.d. Explain OUT Instruction.(CO4) 2

2.e. List the flags in 8086?(CO5) 2

SECTION B 30

3. Answer any five of the following:-

3-a. Draw the Timing diagram for MVI B, 43H .(CO1) 6

3-b. Why the lower order address bus is multiplexed with data bus? How they will be de-multiplexed?(CO1) 6

3-c. Explain the following instructions: CALL, DAD B, XTHL, STAX B, CMP M (CO2) 6

3-d. Explain the various addressing modes of 8085 microprocessor with example. (CO2) 6

3.e. Write an assembly language program to add two 8-bit numbers. (CO3) 6

3.f. Write down the differences between memory mapped I/O and I/O mapped I/O. (CO4) 6

3.g. How the logical adderess in 8086 is converted into physical adderess? Explain. (CO5) 6

SECTION C 50

4. Answer any one of the following:-

4-a. Draw the block diagram of 8085 microprocessor architecture and explain each block in detail. (CO1) 10

4-b. Describe the pin diagram of 8085 and explain them. (CO1) 10

5. Answer any one of the following:-

5-a. Write a program to transfer a block of data from one location to the other. (CO2) 10

5-b. Write an assembly language program to add two 16 bit hexadecimal numbers.(CO2) 10

6. Answer any one of the following:-

6-a.	Write a program to count from 0 to 9 with a one-second delay between each count. At the count of 9, the counter should reset itself to 0 and repeat the sequence continuously. Use register pair HL to set up the delay and display each count at one of the output ports. Assume the clock frequency of the microcomputer is 1 MHz. (CO3)	10
6-b.	Write a program to count continuously in hexadecimal from FFH to 00H in a system with clock frequency 0.5 microseconds. Use register C to set up a delay of 1ms between each count and display output at one of the output ports. (CO3)	10

7. Answer any one of the following:-

7-a.	Write a program to perform the following functions and verify the output .Load the number 8BH in register D. Load the number 6FH in register C. Increment the contents of C register by one. Add the contents of registers C and D and display the sum at the output PORT 1.(CO4)	10
7-b.	Write a program to do the following:Load the number 30H in the register B and 39H in register C.Subtract 39H from 30H.Display the answer at PORT 1. (CO4)	10

8. Answer any one of the following:-

8-a.	Show the pin configuration and function of signals of 8086 microprocessor.(CO5)	10
8-b.	Draw the internal block diagram of 8086 microprocessor. Explain the BIU and EU.(CO5)	10