

4E1304

Roll No. [REDACTED]

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4E1304

**B. Tech. IV - Sem. (Main) Exam., - 2022**  
**Artificial Intelligence & Data Science**  
**4AID3 – 04 Microprocessor & Interfaces**  
**CS, AID, CAI**

Time: 3 Hours

Maximum Marks: 70

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*Instructions to Candidates:*

*Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL

2. NIL

**PART – A**

**(Answer should be given up to 25 words only)**

**[10×2=20]**

**All questions are compulsory**

~~Q.1~~ What is the function of ALE signal in 8085 up?

~~Q.2~~ Specify the size of data, address, memory word and memory capacity of 8085 up.

Q.3 State the function of following 8085 instructions –

- (i) JP
- (ii) JPE
- (iii) JPO
- (iv) JNZ

Q.4 Write a program to add 7B H and 6A H using ADI instruction.

Q.5 Explain the PSW of 8085 up.

Q.6 Why data bus is bidirectional?

Q.7 Mention the purpose of SID and SOD lines.

Q.8 What are priority interrupts?

Q.9 List 16 bit registers of 8085 microprocessor.

Q.10 What is the purpose of Hold and Ready pins?

### **PART – B**

**(Analytical/Problem solving questions)**

**[5×4=20]**

**Attempt any five questions (Word limit 100)**

Q.1 What is the use of addressing modes? Explain different types of addressing modes with example.

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Q.2 What are stack related operations? Compare call and push instruction.

Q.3 Explain DAA instruction with an example.

Q.4 Write a program to add the contents of memory locations of 2000 H and 2001 H and place the results in memory location 2002 H.

Q.5 Compare the function of following instruction pairs –

- (i) JMP & CALL
- (ii) STAX & LDAX
- (iii) ANA & ANI
- (iv) LHLD & LXI

Q.6 Show which interrupt will be masked if the following instructions are executed –

(i) MVI A, 10 H

(ii) SIM

Q.7 Write a 8085 program that enables RST 7.5 and RST 5.5 interrupts.

### **PART – C**

**(Descriptive/Analytical/Problem Solving/Design Questions)**

**[3×10=30]**

**Attempt any three questions**

Q.1/ Design 8085 up based system with following specifications –

(i) System frequency 3MHz

(ii) Interface 16 Kb EPROM using 8 Kb chip

(iii) Interface 32 Kb RAM using 16 Kb chip

Q.2/ Draw the block diagram of 8279 Keyboard/display interface. Explain its operation also.

Q.3 Explain the evolution of microprocessor and list the sequence of events that occurs. When 8085 up reads data from memory.

Q.4/ Draw the internal block diagram of 8251 USART and explain its initialization process.

Q.5 Compare RS – 422 A and RS – 423 A serial data standard.

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