4E1304

Total No. of Questions : 22 Total No. of Pages : 04

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4E1304

B.Tech. IV-Sem (Main/Back) Exam. 2024

COMPUTER SCIENCE & ENGINEERING (AI)

4CAI3-04, Microprocessor and Interfaces

CS, AID, CAI

Time : 3 Hours **Maximum Marks : 70**

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 questions from Part-C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing 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. ..... 2. .....

PART-A [10×2=20]

Answer should be given up to 25 words only

All questions are compulsory.

Each question carries 02 marks

Q.1. Specify the size of data, address, memory word and memory capacity of 8085 microprocessor.

Q.2. Draw the flag register configuration for 8085 microprocessor.

Q.3. State the difference between direct and indirect addressing.

Q.4. What is the use of tristate devices in bus oriented system?

Q.5. Describe the use of RIM and SIM instruction.

Q.6. Write a program to add 7 BH and 6 AH using ADI instruction.

Q7. What is the difference between delay and counter?

Q.8. State the difference between JUMP and CALL instruction.

Q.9. What are different modes of 8255 PPI?

Q.10. Mention the purpose of HOLD and READY pins of 8085 microprocessor.

PART - B [5×4=20]

Analytical / Problem-solving questions. Attempt any 05 questions.

Each question carries 04 marks.

Q.1. Explain the internal architecture of 8085 microprocessor using neat diagram.

Q.2. What are external initiated operations in 8085 microprocessor? Explain briefly.

Q.3. Compare the function of following instruction pairs :

(i) JMP & CALL

(ii) STAX & LDAX

(iii) LHLD & LXI

(iv) ANA & ANI

Q.4. What is the use of stack? Explain the PUSH & POD operations using suitable example.

Q.5. Explain the control word of 8254 program. interval timer using suitable diagram.

Q.6. Write a program to do addition of two 8 bit numbers whose 16 bit result is stored at memory location 5080H.

Q.7. Compare RS232C and RS422A serial RS422A serial data standards.

PART - C [3×10=30]

Descriptive / Analytical / Problem-solving / Design questions.

Attempt any 03 questions. Each question carries 10 marks.

Q.1. Design 8085 based system with following specifications :

(i) System frequency 3MH$_z$

(ii) Interface 16 kb EPROM using 8kb chip

(iii) Interface 32 kb RAM using 16 kb chip

Q.2. Draw the block diagram of 8259 programmable interrupt controllers and explain its operation.

Q.3. How Liquid crystal display is interfaced with 8085 microprocessor? Explain it using neat diagram.

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

Q.5. Write short notes on the following :

(i) Memory interfacing

(ii) IEEE 488

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