17443

15162

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory*.

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Write the answers in sequential order.

Marks

1. Attempt any FIVE : **20**

(a) Draw the architecture of 8085 microprocessor.

(b) Write assembly language program to obtain two's complement of 8-bit number.

(c) Write assembly language program to receive 8-bit serially on SID line. Store the byte at 1000H memory location.

(d) Draw the block diagram of 8255.

(e) With the help of suitable diagram explain the timer modes of 8155.

(f) List the different data transfer techniques and explain DMA controlled data transfer technique.

(g) Draw the interfacing diagram of 7-segment display to 8085 through 8255.

P.T.O.

2. Attempt any FOUR : **16**

(a) State any eight important features of 8085.

(b) Write assembly language program to add two 8-bit numbers.

(c) Draw the timing diagram of STA 7000H instruction.

(d) List the hardware interrupts used in 8085 and mention their vector location and priority.

(e) Interface 4K byte of RAM to 8085. Draw the memory map.

(f) Draw the control word format of 8255 for the following :

(i) All port as output in mode 0.

(ii) Port A and Port B input in model and Port C as output in mode 0.

3. Attempt any FOUR : **16**

(a) Draw the flag register of 8085 and explain the function of each bit.

(b) Explain the addressing modes of 8085 with suitable example.

(c) Write assembly language program to exchange the lower and upper nibble of byte.

(d) Draw the format of SIM instruction and explain the function of each bil.

(e) Differentiate between I/O mapped I/O and memory mapped I/O (any four points).

(f) State any four important features of 8355.

4. Attempt any FOUR : **16**

(a) State the function of program counter and stack counter.

(b) State the function of LDA address and SHLD address instructions.

(c) Write assembly language program to transfer 5 bytes of data starting from 1000H to 2000H onwards.

(d) List the interrupt related instructions. Explain any two.

(e) Write assembly language program to generate square wave on SOD line.

(f) Explain the operating modes of 8255.

5. Attempt any FOUR : **16**

(a) List the different control signals in 8085 and draw the suitable diagram to generate control signals.

(b) Write assembly language program to find largest number out of five numbers stored from 2000H onwards and store the result at 4000H.

(c) What is stack and sub routine ? State any two advantages of sub routine.

(d) State the function of SID and SOD lines and give two advantage of serial communication.

(e) Compare 8155, 8255 and 8355 (any four points).

(f) Draw the interfacing of DAC with 8085 through 8255. Write assembly language program to generate square waveform using DAC.

6. Attempt any FOUR : **16**

(a) State the necessity of demultiplexing of low order address / data bus. Explain with a suitable diagram.

(b) Write assembly language program to arrange five numbers in ascending order.

(c) Interface 8 K byte of ROM by using 4 K byte of memory chips.

(d) Draw the block diagram of 8155.

(e) Draw the interfacing of ADC to 8085 through 8255.

(f) Draw the interfacing of stepper motor with 8085 through 8255. Write assembly language program to rotate stepper motor clockwise with 4-step sequence.

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