

(6 pages)

**MAY 2012**

**P/ID 40012/PPHM**

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Time : Three hours

Maximum : 100 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. What is the function of ALE signal?
2. Explain the function of the opcode LHL with an example.
3. Draw the timing diagram for fetch cycle.
4. Explain the crystal frequency and the clock frequency used in 8085A microprocessor.
5. Define Hand shake.
6. What is the purpose of latch and tristate buffer?
7. Define Resolution and Accuracy in analog to digital conversion.
8. Why do we need a DAC interface?

9. Which is the unmaskable interrupt? Why?
10. What is the use of NOP and HLT instructions?

PART B — (5 × 6 = 30 marks)

Answer ALL questions.

All questions carry equal marks.

11. (a) Explain the functions of the opcodes STAX, SHLD and LXI with suitable examples.

Or

- (b) Draw the pin configuration of 8085 microprocessor and explain the function of various pins in it.

12. (a) What are delay routines? Where it is needed? Explain the method of calculating the delays with an example.

Or

- (b) Draw the timing diagram of instruction cycle for STA instruction and explain.

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13. (a) Discuss the absolute and partial decoding with suitable examples.

Or

- (b) Discuss the methodology of device selection and data transfer with the necessary diagram.

14. (a) Explain in detail the interrupt driven data transfer for interfacing I/O devices.

Or

- (b) Describe the method of interfacing a seven segment display with the 8085 microprocessor.

15. (a) Design and implement an interrupt with necessary RST instructions.

Or

- (b) Discuss the functions of RIM instruction and obtain the pattern for the command byte to be first loaded.

PART C — (5 × 10 = 50 marks)

Answer ALL questions.

All questions carry equal marks.

16. (a) Explain the various opcodes available in the immediate addressing mode in the arithmetic group, logical group and data transfer group instructions with examples for each one.

Or

- (b) Write an assembly language program to multiply two eight bit numbers by bit rotation method. Explain the each instruction and its functioning with an example.
17. (a) Draw the timing diagram for opcode fetch machine cycle and explain the function of various signals in it. Show, how you will introduce a wait state in the opcode fetch timing diagram.

Or

- (b) Draw the timing diagram for DCX instruction with and without wait state and explain its function.

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18. (a) Describe in detail the methodology of  
(i) Memory mapped I/O mode (ii) I/O mapped  
I/O mode and compare their advantages and  
disadvantages.

Or

- (b) Explain the execution of IN and OUT  
instruction in 8085  $\mu p$  with suitable timing  
diagrams.

19. (a) Describe the main features of analog to  
digital conversion. Show how an ADC chip  
can be interfaced to 8085 microprocessor with  
suitable example.

Or

- (b) Describe the signal configuration of Intel 8255  
with the aid of a block diagram. How will you  
program 8255, to act as an input port, or an  
output port?

20. (a) Explain the functioning of interrupt control in (i) simple mode and (ii) polled mode using 8085 microprocessor.

Or

- (b) Write down the various vectored interrupt signals available in 8085 microprocessor. Discuss the use of each one with an example.
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