

G 481

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2014**

**Sixth Semester**

Branch : Electrical and Electronics Engineering

**MICROPROCESSORS AND APPLICATIONS (E)**

(Old Scheme—Supplementary/Mercy Chance)

[Prior to 2010 Admissions]



Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions briefly.  
Each question carries 4 marks.*

1. Explain the signals used in DMA operation in 8085.
2. Describe the functioning of the  $S_0$  and  $S_1$  signals in 8085 in different cases.
3. Write a subroutine to generate a delay of 1 msec. (clock frequency = 3 MHz).
4. Explain the procedure for addition of two BCD numbers.
5. Explain the contents of the accumulator to run SIM instruction.
6. Explain restart as a software instruction. Describe the implementation of RST2.
7. Explain the bit set/reset mode of 8255.
8. Compare and contrast memory mapped and I/O mapped I/O techniques.
9. Why the maximum size of the keyboard matrix is  $8 \times 8$ , when interfaced with 8279 ?
10. Why segmentation is needed ? Give the segment registers of 8086.

(10 × 4 = 40 marks)

**Part B**

*Answer all questions.  
Each full question carries 12 marks.*

11. (a) List all the internal registers in 8085, their lengths and functioning.  
(b) Give the format of flag register in 8085 and explain the function of each flag.

Or

12. Draw and explain the (i) memory read cycle ; and (ii) I/O write cycle of 8085.

Turn over

13. Write an 8085 ALP to generate and display BCD up counter with a frequency of 10 Hz. Explain your algorithm with the help of flow chart.

*Or*

14. Ten binary numbers are stored starting from 4000 H. Write an Assembly Language program to find their squares and store the result starting from 4500 H. Explain your algorithm with the help of flow chart.
15. If the CALL and RET instructions are not provided in the 8085, could it be possible to write subroutine for 8085 ? If so, how will you call and return from the subroutine ? Illustrate with an example.

*Or*

16. With a neat block diagram, describe the interrupt structure of 8085. Explain what is meant by pending interrupts.
17. Interface 16 K bytes of EPROM and 8K bytes of RAM to 8085. Draw the circuit diagram and design the address decoding logic.

*Or*

18. Interface 4 × 4 matrix keyboard and six displays to the 8085 using 8279. Write initialisation program for encoded key scan and left entry for display.
19. With a neat block schematic of a DMA controller, explain the function of each signal connected to it. Explain how the DMA controller is used to transfer data between memory and peripheral devices.

*Or*

20. With a neat circuit diagram, show and explain how ADC 0808 is interfaced as input side and DAC 0800 from the outside in a 8085 system.

(5 × 12 = 60 marks)

