VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD
B.E. (C.S.E.) II Year II-Semester Main Examinations, May-2017
Microprocessors and Interfacing

Time: **3** hours
Max. Marks: **70**

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A *(10 ×2 = 20 Marks)*

1. Draw flag register of 8085 and write function of each flag.
2. Perform the logical operations RLC and RRC when accumulator contents are 10100111 and CF = 0.
3. How many memory locations can be addressed by a microprocessor with 14-address lines?
4. Write different DMA modes of data transfer.
5. Differentiate between BSR and I/O modes of 8255 PPI.
6. Give the status register of 8251 and explain each bit.
7. Name the five interrupt sources of 8051.
8. How does the 8051 Microcontroller differentiate among a positive number, a negative number, and a bit pattern?
9. Distinguish between synchronous and asynchronous serial communication.
10. List different applications of Microcontrollers.

Part-B *(5 × 10 = 50 Marks)*
(All bits carry equal marks)

11. a) Describe addressing modes of 8085 Microprocessor with example.
    b) Write logical steps to add the following two Hex numbers. Both the numbers should be saved for future use. Save the sum in the accumulator.
       Numbers: A2H and 18H

12. a) What is DMA? Explain DMA controller with neat diagram.
    b) If the program counter is always one count ahead of the memory location from which the machine code is being fetched, how does the microprocessor change the sequence of program execution with a jump instruction?

13. a) Explain programmable interval timer with neat diagram.
    b) Write an assembly language program to display 'CSE' using 8279 keyboard interfacing.

14. a) Draw the architecture of 8051 Microcontroller and explain its features in detail.
    b) Explain program control and branch instructions of microcontroller.

15. a) Explain interfacing of 8051 microcontroller with DAC.
    b) How to put 8051 micro controller in idle mode explain.

16. a) Classify the instruction set of 8085 microprocessor with example.
    b) If the clock frequency is 10 MHz, how much time is required to execute an instruction of 18 T-states.

17. Write short notes on any *two* of the following:
    a) RS232 method of serial data transfer.
    b) Memory organization of 8051 microcontroller.
    c) Interface 8kx 8 data RAM with microcontroller.

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