

Hall Ticket Number:

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Code No. : 22502

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. II Year (I.T.) II-Semester (Main) Examinations, May-2016

Microprocessors and Microcontrollers

Time: 3 hours

Max. Marks: 70

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

Part-A (10 × 2 = 20 Marks)

1. List the four categories of 8085 instructions that manipulate data.
2. Calculate the number of memory chips needed to design 8K byte memory if the chip size is 1024*8 bits.
3. Write instructions to load the Hexadecimal number 65H in register C, and 92H in Accumulator A. Display the number 65H at PORT0 and 92H at PORT1.
4. What are the commonly used priority modes that are available under software control in 8259 A?
5. Indicate the bit positions of PSW register of 8051.
6. Explain MUL, DIV instructions of 8051.
7. Draw the block diagram of two line 20 character LCD display.
8. Explain IE register of 8051.
9. What is a relay? Draw the diagram of connecting 8051 to a solid state relay.
10. Draw a flow diagram for getting data from the analog world to a microcontroller.

Part-B (5 × 10 = 50 Marks)

11. a) Draw the block diagram of 8085 and explain each block [6]
b) Write the function of each of the following instruction and also indicate the machine cycles and T-states required i) LDA 2000 ii) PUSH B iii) SUB B [4]
12. a) What are the different ways of Interfacing peripherals to 8085? Elaborate. [5]
b) Draw the circuit to interface 4096 R/W memory locations to 8085 μ p and also draw the the address map. [5]
13. a) Explain the modes of operation of 8254. [6]
b) List different category of instructions of 8051. Give 2 examples for each of them. [4]
14. a) Explain interfacing of Intelligent LCD display with microcontroller. [7]
b) List different modes used to perform serial communication of 8051. [3]
15. a) What is ADC0809. Elaborate how to interface it with 8051. [7]
b) List the applications of Microcontroller. [3]
16. a) List 8085 hardware and software interrupts and explain. [7]
b) Write the steps to interface a LED display with microprocessor. [3]
17. Write short notes on any *two* of the following:
a) Explain the ports of 8051 and how they are programmed. [5]
b) Give the bit positions of TMOD register and TCON register. [5]
c) Why RTOS is preferred for an embedded application. [5]