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VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (ECE) III Year I-Semester Main & Backlog Examinations, December-2017

Microprocessors and Microcontrollers

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. List the advantages of maximum mode operation of 8086 μ p.
2. Draw the flag register format of 8086 μ p and explain.
3. Explain the assembler directives (i) EVEN (ii) PTR.
4. Differentiate between conditional and unconditional jump instructions of 8086 μ p.
5. Draw the control word format of 8255 in I/O mode and explain.
6. List out the important parameters needs to be consider for serial transmission.
7. Write an ALP in 8051 μ c to complement the upper nibble of the given byte (47H) stored in accumulator.
8. Write about MOV, MOVC, MOVX instructions in 8051 μ c.
9. Mention function of RS, R/W, Enable signals of LCD module.
10. Draw the SCON register format of 8051 μ c and explain.

Part-B (5 × 10 = 50 Marks)

11. a) Briefly explain the addressing modes of 8086 μ p with suitable examples. [5]
 b) Draw the read and write cycles diagrams of 8086 μ p under minimum mode of operation. [5]
12. a) Write an ALP in 8086 μ p to sort the elements in descending order. [6]
 b) Differentiate between procedures and macros with suitable examples. [4]
13. a) Interface 8253 with 8086 μ p and explain its different modes of operation. [5]
 b) Explain the architecture of 8279 when interfaced with 8086 μ p. [5]
14. a) Discuss about the RAM and ROM memory organization of the 8051 μ c with suitable diagram. [5]
 b) Write an ALP to generate the square on P1.3 of 8051 μ c with 2ms of delay using timer1 in mode1. (Assume xtal freq=11.0592Mhz) [5]
15. a) Interface 16Kx8 DRAM and 16Kx8 PROM with 8051 μ c. [5]
 b) Interface D/A converter to 8051 μ c to write an ALP to generate sawtooth waveform. [5]
16. a) Write about the significance of bus interface unit in 8086 μ p architecture. [5]
 b) Explain the following 8086 μ p instructions with examples [5]
 (i) MOVSB (ii) DAA (ii) PUSHF (iv) WAIT (v) CLD
17. Answer any *two* of the following: [5]
 - a) Interface two 16KX8 RAM chips and two 32KX8 EPROM chips to 8086 μ p (Choose suitable address map). [5]
 - b) Write about DJNZ, CJNE, LCALL, ROR, ADC instructions in 8051 μ c with examples. [5]
 - c) Interface 7-segment display to 8051 μ c to display 0-9 continuously. [5]