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Code No. : 15404 O

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (ECE) III Year I-Semester Old Examinations, May/June-2019

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. Differentiate between minimum and maximum mode of operations of 8086 μ p.
2. Write the importance of Instruction Byte Queue of 8086 μ p.
3. Give the operation of following 8086 instructions with an example
i. DAS ii. PUSH
4. List any one string processing instruction of 8086 μ p with an example.
5. Neatly sketch the block diagram of 8253 Timer?
6. What is 8257? Which register(s) of it must be configured to interface with 8086 μ p?
7. Draw the PSW format of the 8051 μ c. And indicate each bit's significance.
8. List the built-in memories and I/Os available for 8051 μ c.
9. Name the interrupt sources of 8051 μ c in the order of its priority.
10. Which IC is used to drive a stepper motor to be controlled by 8051 μ c? Justify its need.

Part-B (5 × 10 = 50 Marks)

11. a) With a neat sketch explain about memory segmentation in 8086 μ p and list the features and advantages of each segment. [6]
b) List any four addressing modes of 8086 μ p with suitable assembly instruction examples. [4]
12. a) Assume that there exists a total of 60 data-items (decimal numbers) starting from 2200H memory onwards in 8086 based system. Write an assembly language program to fetch the data and indicate the even numbers count in AL & odd numbers count in AH registers. [5]
b) Define procedure? Write any two techniques of passing parameters to a Procedure with suitable examples in 8086? [5]
13. a) Draw the block diagram for 8255 and explain its operation in detail. [5]
b) Design a memory interface with 8086 μ p to interconnect two 4kB chips of EPROM and two 4kB chips of SRAM. Assume suitable starting address range for differentiating the memories. [5]
14. a) Draw the pin diagram of 8051 microcontroller and indicate the alternate pin functions of Port3. [4]
b) Assume that XTAL=11.0592 MHz, write 8051 assembly program to generate a square wave with 50Hz on GPIO pin: P2.1. Use Timer-0 in mode-1. [6]

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15. a) With a circuit diagram, explain the sensor interface through ADC0804 to 8051 μ C. [6]
Mention the steps involved in converting the Analog data into its digital form.
- b) Write 8051 assembly program to generate triangular wave by interfacing with 8-bit [4]
DAC?
16. a) Illustrate the register organisation of the 8086 μ P in detail. Draw the flag register [6]
format of 8086 .
- b) Write any two Branching instructions; and, any two bitwise instructions supported by [4]
8086 μ P with suitable examples?
17. Answer any *two* of the following:
- a) Draw the interfacing of 8279 with 8086 microprocessor for interconnecting I/O. [5]
- b) Describe RAM and ROM Memory Organisation of 8051 microcontroller. [5]
- c) Explain the design modules for interfacing 2x16 monochrome LCD with 8051 μ C. [5]

