Hall Ticket Number:

Code No. : 31324 S

VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD

B.E. (ECE) III Year I-Semester Supplementary Examinations, May/June-2018

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 out the features of 8086 microprocessor.
2. Write about base index and relative addressing modes of 8086 with suitable examples.
3. Compare procedures and macros in assembly programming.
4. Write the advantages using assembler directives in programming.
5. Write the various modes of operation of 8253.
6. Justify the necessity of interfacing 8255 with 8086μp.
7. List the advantages of bit addressability of 8051MC with suitable example.
8. Differentiate between microprocessor and microcontroller.
9. Draw the IE register format of 8051μc and explain.
10. How to double the baud rate of 8051μc for serial communication?

Part-B (5 × 10 = 50 Marks)

11. a) Define Interrupt. Explain the interrupt response sequence with suitable diagram for 8086 μp. [6]
    b) Explain the special function register organization of the 8086 μp in detail. [4]
12. a) Write an ALP to find out the given string is palindrome or not. [5]
    b) Explain the following instructions of 8086 μp with examples. [5]
    (i) AAA (ii) LEA (ii) SCASB (iv) TEST(v) XLAT
13. a) Draw the block diagram of 8257 and explain its operation. [5]
    b) Interface two 32KX8 RAM chips and two 32KX8 EPROM chips to 8086 μp. (RAM space should include IVT). [5]
14. a) Write ALP of 8051μc to sort the 10 numbers stored in RAM location starting at 40H in ascending order. [5]
    b) Explain about various Addressing modes supported by 8051μc with suitable example. [5]
15. a) Interface stepper motor with 8051μc and write the ALP for rotating the motor in clockwise direction and counter clockwise direction. [5]
    b) Interface ADC with 8051μc and explain its operation. [5]
16. a) Explain the role of execution unit in 8086μp. [5]
    b) Write the 8086μp ALP to predict whether the given number is prime number or not. [5]
17. Answer any ***two*** of the following: [5]
    a) Write about USART interfacing with 8086μp. [5]
    b) Write the steps involved in 8051μc Timer/counter programming. [5]
    c) Interface 4x3 matrix keypad with 8051μc and write a program to scan the pressed key. [5]

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