Hall Ticket Number:

Code No.: 31304 S

VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD

B.E. (E.C.E.) III Year I-Semester Supplementary Examinations, May/June-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. Explain the following pins of 8086.
   a) LOCK' b) M/IO'
2. What is the purpose of Instruction queue of 8086?
3. Differentiate between Macro and Procedure.
4. Write a program to convert packed BCD number into its unpacked form using 8086.
5. What are the different modes of 8253?
6. List the advantages of DMA.
7. Explain the PSW register of 8051.
8. List the bit addressable instructions of 8051.
9. Define the bits of IE register of 8051 microcontroller.
10. What is the necessity of interfacing 8255 with 8051, when 8051 has already I/O Ports?

Part-B (5 × 10 = 50 Marks)

11. a) Explain different Addressing modes of 8086 with examples. [5]
    b) What is an Interrupt? Discuss in detail the interrupt structure of 8086. [5]
12. a) Write an ALP to determine whether the given string is palindrome or not. [5]
    b) Explain the following instructions of 8086 with examples. [5]
    i) LEA *ii)* PUSH *iii)* LDS *iv)* STD *v)* AAA
13. a) Draw the interface diagram of 8279 keyboard controller with 8086. [5]
    b) Write an ALP to read a character from the key pressed. [5]
14. a) Explain various signals of 8051 microcontroller with neat pin diagram. [8]
    b) Write the RAM memory organization of 8051. [2]
15. a) Show the design of 8051 based system with 4K bytes of program ROM and 4K bytes of Data ROM. [5]
    b) Explain SCON register configuration. [5]
16. a) Draw and discuss the interrupt structure of 8086. [5]
    b) Explain the necessity and stack operation of 8086 microprocessor with suitable instructions. [5]
17. Answer any *two* of the following:
    a) Internal architecture of 8251. [5]
    b) Write a program to generate a square wave using timer1 in model with a delay of 5 msec using 8051 microcontroller. (Assume crystal frequency = 11.0592 MHz). [5]
    c) ADC interfacing with 8051. [5]

****