

EI - 703

B.E. VII Semester

Examination, December 2013

Advanced Microprocessor and Micro Controller

Time : Three Hours

Maximum Marks : 70

- Note: 1. Attempt one question from each unit.  
2. All questions carry equal marks.

**Unit - I**

1. a) Explain the concept and advantages of segmented memory in 8086. Also explain the physical address formation. 7  
b) Draw and discuss interrupt structure of 8086. What is the difference between hardware and software interrupt? 7

OR

2. a) Explain the control word format of 8255 in I/O and BSR mode. 7  
b) Discuss the register organization of 8087. Discuss bit definitions of TAG word and status word of 8087. 7

**Unit - II**

3. a) - Explain the use of each PSW bit in 8051. What are the flags that associate with ALU operations? 7  
b) - What are the modes in which T0 and T1 (Timer 0 and Timer 1) can be programmed to be used in 8051? How do you use the Timer 0 as a counter of external events? 7

OR

4. a) Write a 8051 assembly language program to check if the character string of length 7, stored in RAM location 50H onwards is a palindrome. If it is output 'y' to P1. 7  
b) Explain the interfacing of a transducer to an ADC device of microcontroller. How will you display the generated output on a LCD display? 7

**Unit - III**

5. a) What are the different ways of classifying the types of microcontrollers? What are the features of Harvard and princeton architectures? 7  
b) Explain in detail how the RISC core improves the performance of an MCU (Microcontroller unit)? 7

OR

6. a) Describe 8096 architecture. List innovative features with respect to the 8051 architecture. 7  
b) Describe functioning of HSO unit and HSI unit in 8096. 7

**Unit - IV**

7. a) How are PUSH and POPS accomplished in ARM using LDM and STM instructions? 7  
b) Explain ARM architecture and its features. 7

OR

8. a) For a 32-bit ARM processor, explain SWI instruction along with its applications. 7  
b) Describe implementation of branch, call and return instruction in ARM instruction set. 7

**Unit - V**

9. a) Describe all the bits during the serial transfer from the master in an I<sup>2</sup>C interface device. 7  
b) When do you need the interface circuit for application of microcontroller? 7

OR

10. Write short notes on any two 14  
a) RS 232                      b) UART  
c) CAN                         d) SPI