

Roll No .....

**CS - 601****B.E. VI Semester**

Examination, December 2015

**Microprocessor and Interfacing****Time : Three Hours****Maximum Marks : 70**

- Note:** i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.  
 ii) All parts of each questions are to be attempted at one place.  
 iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.  
 iv) Except numericals, Derivation, Design and Drawing etc.

**Unit - I**

1. a) What is bus? Specify the functions of address bus, data bus and control bus.  
 b) What are different data transfer schemes available in microprocessor system?  
 c) What are interfacing devices? Why they are needed?  
 d) What do you understand by microprocessor architecture? Explain the conventional Von-Neumann computer architecture in detail.

OR

Explain in brief the evolution of advanced microprocessors.

**Unit - II**

2. a) What are flags? What they signifies?  
 b) Explain the need to demultiplex the bus AD<sub>1</sub>-AD<sub>0</sub> in 8085 microprocessor.  
 c) What are different addressing modes in 8085 microprocessor? Explain with examples.  
 d) Write an ALP in 8085 to find the largest number in a array.

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OR

Explain the register organisation of 8085 and explain typical application of each register.

**Unit - III**

3. a) What is the concept of pipelining?  
 b) Name the hardware interrupts of 8086 microprocessor.  
 c) Discuss the segmentation of memory in 8086 microprocessor.  
 d) Write an ALP in 8086 to find/count the number of odd and even number in a given series of numbers.

OR

Draw the functional block diagram of 8086 microprocessor. Explain each block in brief.

**Unit - IV**

4. a) How a memory is interfaced to a microprocessor?  
 b) Why 8253 programmable counter/timer is needed in a microprocessor system?  
 c) Explain why the interrupts of 8085  $\mu$ p are called vectored interrupts.  
 d) Explain 8259 programmable interrupt controller with neat functional block diagram.

OR

Explain direct memory access controller in detail with neat block diagram why it is needed?

**Unit - V**

5. a) What is the difference between microprocessor and microcontroller?  
 b) Write a program in 8051 to add three numbers in array.  
 c) What are the operating modes of serial port of an 8051?  
 d) Draw the architecture of 8051 microcontroller. List all its features.

OR

Write a detailed note on different applications of microcontroller.

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