Total No. of Questions : 5] *[Total No. of Printed Pages : 2*

Roll No .....

CS-601

B.E. VI Semester

Examination, December 2016

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.

1. a) List applications of microprocessor-based system.
   b) Write basic concepts in memory interfacing.
   c) Compare Microprocessor and Microcontroller.
   d) With suitable examples explain how I/O devices are connected using memory mapped I/O and peripheral I/O?

   OR

   Design a microprocessor system to interface an 8K×8 EPROM and 8K×8RAM.

2. a) Write the function of register organization of 8085.
   b) Explain the difference between a JMP instruction and CALL instruction.
   c) List out the five categories of the 8085 instructions. Give examples of the instructions for each group.
   d) Write a delay routine to produce a time delay of 0.5 second in an 8085 processor-based system whose internal clock frequency is 3MHz.

   OR

   With timing diagram, explain the memory write operation in 8085 microprocessor.

3. a) What do you mean by Memory Segmentation?
   b) How can we achieve pipelining in 8086 microprocessor?
   c) Write different addressing modes used in 8086 microprocessor.
   d) Draw typical 8086 minimum mode configuration and explain the function of signals used in minimum mode.

   OR

   For the following instruction indicate the addressing modes type and the physical address of the source operand, if CS=2000H, DS=543AH, SS=9AC5H, SI=3200H, DI=2ABCH, BX=3F00H, BP=329AH
   i) ADD BL, [SI + 10H]
   ii) MOV AX, [BX] [DI + 01H]
   iii) MOV AX, [BP – 100H]

4. a) What is the difference between 8253 and 8254?
   b) Draw a functional block diagram of 8257.
   c) Write a short note on RS-232C standard.
   d) What are the functions of a DMA controller? Explain the various DMA modes? Describe in brief the steps that take place during a DMA operation.

   OR

   Explain the modes of operations of 8253/8254.

5. a) Discuss the advantages of microcontroller based systems over microprocessor base systems.
   b) List the salient features of 8051 family of microcontroller.
   c) Discuss the following signal descriptions of 8051:
      i) ALE/PROG
      ii) T0 AND T1
   d) Discuss the addressing modes and the data type supported by 8051.

   OR

   Draw and discuss the internal architecture of 8051.

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