III B.Tech. II Semester Supplementary Examinations December 2017
Microprocessors and Interfacing
(Electronics and Communication Engineering)

Max. Marks: 70   Time: 3 Hours

Answer any **five** questions
All Questions carry equal marks (**14 Marks each**)
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1. a) Draw the internal block diagram of 8086. Explain the function of each block in detail. 7M
   b) With relevant pin diagram explain the maximum mode operation of 8086. 7M

2. a) Explain the following instructions of 8086 processor.
      i) INTO   ii) IDIV   iii) TEST   iv) RCR   v) RET   10M
   b) Write a program to sort an array in descending order. 4M

3. a) Discuss about three modes of operations of 8255 with relevant configuration diagrams. 7M
   b) Interface the stepper motor with 8255 and write an ALP to rotate the stepper motor continuously in clockwise direction. 7M

4. a) Explain and Draw a block diagram to interface two 16K X 8 SRAM (62128) to the 16-bit data bus of 8086 based system. Design the address decoder for the address range from 00000H - 07FFFFH for both the SRAMs. 10M
   b) Explain the need and importance of DMA. 4M

5. a) What is the interrupt vector table? Draw and explain the interrupt vector table for 8086. 8M
   b) Briefly explain about DOS and BIOS interrupts. 6M

6. a) Explain about different operating modes of 8253. 7M
   b) Explain the architecture and interfacing of keyboard controller. 7M

7. a) Draw the interface circuits for data conversion from TTL to RS 232 conversion. 8M
   b) Distinguish between Asynchronous and Synchronous data transfer schemes. 6M

8. a) Briefly explain the salient features of 80386. 7M
   b) Explain Real and protected mode segmentation and paging. 7M

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