Hall Ticket No | | | | | | | | | | | Question Paper Code: AECB55

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)
(Dundigal-500043, Hyderabad)

B.Tech VII SEMESTER END EXAMINATIONS (REGULAR) - FEBRUARY 2022
Regulation: R18

MICROPROCESSORS AND INTERFACING

Time: 3 Hours **(ME)** **Max Marks: 70**

Answer FIVE Questions choosing ONE question from each module
(NOTE: Provision is given to answer TWO questions from any ONE module)
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

MODULE – I

1. (a) Explain in detail about register organization of 8086 microprocessor. **[7M]**
   (b) Develop an assembly language program to sort the values in ascending and descending order. **[7M]**

2. (a) Explain in detail about flag manipulation instructions of 8086 microprocessor with example. **[7M]**
   (b) Estimate the memory address of the next instruction executed by the microprocessor, when operated in the real mode, for the following CS:IP combinations:
   i) CS=1000H and IP=2000H
   ii) CS=2000H and IP=1000H **[7M]**

MODULE – II

3. (a) Write the classification of interrupts in 8086 microprocessor. Explain about interrupt handling mechanism in 8086 microprocessor. **[7M]**
   (b) Draw and explain timing diagram for read operation in minimum mode of 8086 microprocessor. **[7M]**

4. (a) Explain about maximum mode operations of 8086 and draw timing diagram for memory write operation. **[7M]**
   (b) What are DOS and BIOS interrupts. Illustrate the functions of the following DOS interrupts.
   i) Function Call 01
   ii) Function Call 02
   iii) Function Call 03
   iv) Function Call 04 **[7M]**

MODULE – III

5. (a) What is the need of 8257 DMA controller? Draw the block diagram of 8257 DMA controller and briefly explain each block. **[7M]**
   (b) Explain about the Simplex, Halfduplex and FullDuplex modes of communication present in 8086 microprocessor. **[7M]**

6. (a) Briefly explain Asynchronous and Synchronous data transfer schemes. **[7M]**

(b) Build an interface between 8086 microprocessor and two16K X 8 EPROM and two 32K X 8 RAM chips. Select the starting address of EPROM suitably. The RAM address must start at 00000H. **[7M]**

MODULE – IV

7. (a) List out the four major processing units in an 80286 microprocessor and briefly describe the function of each unit. **[7M]**

   (b) Explain about the design issues of RISC processors. List out the basic features of RISC processors. **[7M]**

8. (a) Write a short note on branch prediction. Illustrate about the real mode and protected mode concepts of 80386 Microprocessor. **[7M]**

   (b) Write the comparison of 80386 processor and pentium processor. **[7M]**

MODULE – V

9. (a) What is key bouncing? Explain how keyboard is interfaced with 8051 microcontroller with neat sketch. **[7M]**

   (b) List all the general purpose registers in 8051 Microcontroller. Explain the IE and IP Register format of 8051microcontroller. **[7M]**

10. (a) With the help of neat diagram explain the 8051 architecture and list applications of 8051 microcontroller. **[7M]**

    (b) Outline the PSW register format in 8051 and give example instructions which effect the respective flags. **[7M]**

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