Code :R7320202

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III B.Tech II Semester(R07) Regular & Supplementary Examinations, April/May 2011
MICROPROCESSORS & MICROCONTROLLERS
(Common to Electrical & Electronics Engineering, Electronics & Control Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks
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1. (a) Describe in detail about the register organization of 8086 microprocessor.
   (b) With a neat pin diagram explain the maximum mode operation of 8086.

2. (a) Write an ALP in 8086 to divide a 32-bit number by a 16-bit numbers.
   (b) Differentiate between procedures and macros giving relevant examples

3. (a) Discuss about the control word formats of 8255 and give the interpretation of each bit in the format.
   (b) Explain about the need for 8255 in microprocessor based systems.

4. (a) With an example, explain how an EPROM can be interfaced to an 8086 microprocessor. Explain with appropriate interface diagram.
   (b) Discuss about the important features of 8257

5. Write a program to initialize 8251 in synchronous mode with even parity, single SYNC character, 7 bit character. Then receive FFH bytes of data from a remote terminal and store it in the memory at address 5000H:2000H.

6. (a) Explain the addressing modes supported by 8051.
   (b) Discuss briefly about 8051 oscillator and clock.

7. (a) Briefly explain the serial port operation in 8051.
   (b) Write short notes on Internal RAM of 8051.

8. (a) Explain the interfacing of external data memory to 8051 using 74LS573 latch with a neat diagram and draw the waveforms.
   (b) Write a brief note on push buttons.

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1. (a) With appropriate pin diagrams explain the minimum and maximum mode of operations of 8086.

   (b) Explain why segmentation is required and discuss about implementation of segmentation in 8086.

2. (a) Write an ALP in 8086 to find the largest of a set of 8 bit numbers.

   (b) What are the differences between procedures and macros?

3. (a) With a neat internal block diagram explain the working of 8255 PPI.

   (b) Discuss about mode 1 operation of 8255 with relevant configuration diagrams.

4. (a) With a neat block diagram, explain the working of 8257 DMA controller.

   (b) Explain briefly about memory interfacing with 8086 microprocessor.

5. (a) Draw the block diagram of 8251 and explain each block.

   (b) What are the steps involved in microcomputer development cycle?

6. (a) Draw and discuss the flag register of 8051.

   (b) Discuss briefly about external program memory of 8051.

7. Explain in brief about Counters and Timers of 8051.

8. (a) Give the pin diagram of CD4511 7-segment display and explain how you can interface to 8051 microcontroller with a diagram.

   (b) Discuss in brief about keyboard interfacing with 8051.

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1. (a) With examples explain about the addressing modes of 8086 microprocessor.
   (b) Discuss briefly about the flag register of 8086.

2. (a) Write an ALP in 8086 to find the smallest of a set of 8 bit numbers.
   (b) Differentiate between procedures and macros. Give examples.

3. (a) Draw the pin diagram of 8279 and briefly explain about each pin.
   (b) Discuss briefly about the control word format of 8279.

4. (a) With a neat block diagram explain the working of 8257 DMA controller.
   (b) Differentiate between static and dynamic RAMs. Give the some examples.

5. (a) List out the steps involved in initializing 8251A for synchronous operation.
   (b) Write a brief note on IEEE 488.

6. (a) Explain the memory organization in 8051.
   (b) Write short notes on Stack Pointer and Program Counter in 8051.

7. (a) Briefly explain the interrupt structure of 8051.
   (b) Why a low-address byte latch for external memory is needed?

8. (a) Explain how to interface ROM with 8051.
   (b) Discuss briefly about the applications of microcontroller.

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Time: 3 hours   Max Marks: 80

Answer any FIVE questions
All questions carry equal marks
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1. (a) Discuss briefly about the instruction set of 8086 microprocessor.

   (b) Mention about speed and memory addressing capability of 8086.

2. (a) Write an ALP in 8086 to find the smallest of a set of 16 bit numbers.

   (b) Discuss briefly about the need for assembler directives with examples.

3. (a) Discuss about mode 2 operation of 8255 with relevant configuration diagrams.

   (b) With an example, explain the need for D/A converts in microprocessor based system.

4. (a) Discuss about priorities of interrupt lines of 8259.

   (b) Explain the need for DMA and also explain how it is implemented in 8086.

5. (a) Write a note on IEEE 488 bus standard listener, talker and controller.

   (b) Draw and discuss the bit format used for sending asynchronous serial data.

6. (a) Discuss briefly about program memory and data memory of 8051.

   (b) Explain the differences between a microprocessor and a microcontroller.

7. (a) Draw and discuss the format and bit definition of IE register of 8051.

   (b) Write short notes on the serial data transmission modes in 8051 microcontroller

8. (a) Explain how 8051 accesses the data memory.

   (b) Explain the interfacing of external data memory to 8051 using 74LS573 latch with a neat diagram and draw the waveforms.

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