Code :R7421003

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IV B.Tech II Semester(R07) Regular Examinations, April 2011
MICRO CONTROLLERS & APPLICATIONS
(Electronics & Instrumentation Engineering)

Time: 3 hours   Max Marks: 80

Answer any FIVE questions
All questions carry equal marks
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1. Bring out the steps involved in memory organization that is how it provides on-chip memory and as well as off-chip expansion capabilities.

2. Write short notes on following:

   (a) DIRECTIVES

   (b) Conditional calls

   (c) ROM address space for 8051.

3. Discuss the hard ware and software attributes of vectored interrupts.

4. How does the register in timers 1 can be programmed in bit addressable.

5. (a) Explain programming and interface for on LCD display controller which has two lines and sixteen characters in each line

   (b) Describe IEEE 488 bus signals and timings.

6. How do we initiate pre emptive scheduling and assign priorities to the tasks for scheduling? Give two examples of the need for pre emptive scheduling.

7. (a) What are the interrupts sources using high speed output (HSO) unit in 80196 HSO unit?

   (b) Explain how a mark able interrupt sources can be made a highest priority source in 80196?

8. (a) How can we change the PSR contents through instruction in ARM? Explain different PSR instructions in ARM.

   (b) Explain how a constant is loaded into a general purpose register of ARM processor.

   (c) What is thumb state?

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Answer any FIVE questions
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1. (a) Show theoretically how on 8051 micro controller can do the SD operations.

    (b) Explain how baud rate can be doubled

    (c) What is the necessity of having two accumulators A & B in 8051.

2. Give flag settings of following instructions

    (a) ADDC

    (b) RRC

    (c) SETBC

    (d) POP

    (e) XCH

    (f) CLR

    (g) ORL

    (h) ANL

3. Discuss the hard ware and software attributes of vectored interrupts.

4. Indicate which mode and which timer are selected for each of the following instructions?

    (a) MOV TMOD, # OOH

    (b) MOV TMOD, # 12H

    (c) MOV TMOD, # 15H

5. (a) If a pneumatic actuations is to be driven by a microcontroller, what kind of interface is needed?

    (b) What are the limitation in pulse counting in micro controller? How to count pulses appearing at a very high rate using micro controllers?

6. (a) Is priority inheritance an important feature? Discuss

    (b) What is important in interrupt latency? Write short note.

    (c) Write a brief note on pipes.

7. What are the uses of the bits in interrupt pending register? How do we use these for interrupt servicing at timer 1 and timer 2 in 80196?

8. (a) Explain how a constant is loaded into a general purpose register of ARM processor.

    (b) Write short note on Thumb state.

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★★★★★

1. Draw and explain off chip RAM and off Chip ROM explain how data can be fetched.

2. (a) Explain decimal arithmetic adjustment instruction.

   (b) Distinguish between LIMP & SIMP instruction

   (c) Write short note on ROM address for space for 8051.

3. (a) Write a program to convert ASCII number in to equivalent decimal number.

   (b) Write short notes on accumulation instructions.

4. How does the register in timers 1 can be programmed in bit addressable.

5. (a) Interface on LCD display unit to 8051.

   (b) Write a subroutine that, the parameter passed to this subroutines is the starting address
   of an ASCII string in ROM and the displays the string on the display unit (LCD)

6. How do we initiate pre emptive scheduling and assign priorities to the tasks for scheduling?
   Give two examples of the need for pre emptive scheduling.

7. (a) What are the interrupt sources using high speed output unit in 80196? What are the uses
   of CAM in 80196 HSO unit?

   (b) Explain how markable interrupt sources can be made highest priority source in 80196?

8. (a) Explain stack operators in ARM.

   (b) What happens if a software interrupt instruction SWI is executed?

   (c) Explain BIC instruction of ARM.

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Time: 3 hours   Max Marks: 80

Answer any FIVE questions
All questions carry equal marks
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1. How do you program external interrupts in 8051.

2. Write assembly language code for testing ROM if the given micro controller 8051.

3. (a) How do you access RAM location 30-7FH as search pad.

   (b) Write short notes on indexed addressing mode.

4. Indicate which mode and which timer are selected for each of the following instructions.

   (a) MOV TMOD, #OOH

   (b) MOV TMOD, #12H

   (c) MOV TMOD, #15H

5. How can we rotate satellite dish anis by 30^0 from the present angular position using a stepper motor and 8051 micro controller? Design a suitable circuit and write assembly language code for 8051. The step angle is 1.8^0 assume current position is 0^0.

6. (a) Describe the functions of IDE.

   (b) What are the development phases in a project? Explain the software development cycle for a project.

7. (a) Draw the memory map of 80196. What architectural features are included in 80196 over 8051.

   (b) How does the PUSH and POP occur using stack pointer of 80196?

8. (a) How can we change the PSR contents through instructions in ARM? Explain different PSR instructions in ARM.

   (b) Explain how a constant is loaded into a general purpose register of ARM processor.

   (c) What is thumb state?

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