VALLIAMMAI ENGINEERING COLLEGE

SRM Nagar, Kattankulathur-603203.

Department of Information Technology

Question Bank- Even Semester 2014-2015

IV Semester

EC 6504-Microcroprocessor & Microcontroller

Handled By,

Ms.T.S.Sheriba, A.P(O.G)&Ms.S.KuinoDalstia, A.P(O.G)

Unit-I

Part-A

1. What is microprocessor? What is the difference between a MP and CPU?
2. Why the program counter and stack pointer are registers of 16 bit?
3. List the flags of 8086?
4. Define stack.
5. What is assembler directives?
6. What are the various programmed data transfer methods?
7. How is physical address generated in 8086?
8. What are the 8086 instructions used for BCD arithmetic?
9. List any four program control instructions available in 8086
10. What is an assembler directive?Give two examples?
11. List any two external hardware synchronization instruction of 8086 microprocessor?
12. How willcarry and zero flags reflectthe result of the instruction CMP BX,CX?
13. Give any four miscellaneous instructions in 16 bit processor?
14. What are the 8086 instructions used for ASCII arithmetic?
15. List the various string instructions available in 8086.
16. What are procedures?
17. What are Macros?
18. What is modular programming?
19. Give any four string instructions?
20. Why string primitives are used?

Part-B

1. (i)Explain the internal hardware architecture of 8086 microprocessor with neat diagram?
   (ii) Write short note about assembler directives?
2. Explain the various addressing modes of 8086 microprocessor with examples?
3. (i) Explain Data transfer, arithmetic and branch instructions ?
   (ii)Write an 8086 ALP to find the sum of numbers in the array of 10 elements?
4. Explain modular programming in detail?
5. Write a note about stack, procedures and macros?
6. Define interrupt and their two classes? Write in detail about interrupt service routine?
7. Explain byte and string manipulation with examples?
8. Write in detail about instruction formats and instruction execution timing?
9. Write an ALP to find the largest number and smallest number in the array?
10. Write a short note about
    (i)Loop, NOP and HLT instructions
    (ii) Flag manipulation, logical and shift& rotate instructions?

Unit-II

Part-A

1. Define a Bus.
2. Differentiate External & Internal Bus.
3. What are the two modes of operation in 8086?
4. What is minimum mode and maximum mode?
5. What is bootstrap loades?
6. What is the use of initialization command words and operation command words?
7. Draw the typical sequence of bus cycles?
8. What are the Principal types of I/O.
9. What is direct memory access?
10. Define double buffering and multiple buffering?
11. What are two classes of interrupts?
12. What do you mean by nonmaskable interrupt?
13. Explain bus request, bus rant and cycle stealing?
14. Define system throughput?
15. Draw the process states and state changes in a simple multiprogramming.
16. What is first fit algorithm?
17. How does a fragmentation problem occur in multiprogramming? How can we avoid it?
18. What is coprocessor configuration?
19. What is the difference between closely and loosely coupled configuration?
20. How does a bus access logic help to resolve the bus arbitration prolem?

Part-B

1. Explain Minimum mode and maximum mode of operation in 8086 in detail.
2. Explain in detail about the system bus timing of 8086/8088.
3. Write notes on the following
   (i) Programmed I/O
   (ii) Interrupt I/O
4. Explain in detail about block transfers and DMA.
5. Explain in detail about closely coupled configurations.
6. Explain loosely coupled configurations in detail.
7. Explain the following in detail
   (i) Process Management &iRMX86
   (ii) Memory Management
   (iii) Virtual Memory
8. Explain Numeric data Processor in detail.
9. Explain in detail about I/O Processor.
10. Explain the following
    (i) Multiprocessor system(4)
    (ii) Coprocessor(4)
    (iii) Multiprogramming(4)
    (iv) Semaphore(4)

Unit-III

Part-A

1. Write the advantage and disadvantage of parallel communication over serial communication?
2. Compare the features of A/D & D/A convertor
3. List the four display modes of 8279 keyboard/display controller
4. List the applications of programmable interval timer.
5. What is interfacing?
6. Give the various modes of 8254 timer?
7. What is the output modes used in 8279?
8. What is the significance of end of conversion signal while interfacing A/D converter to a microprocessor?
9. Name the modes used by the DMA processor to transfer data.
10. What is key bouncing?
11. What is the use of terminal count register?
12. Basic concepts in memory interfacing.

13. What is the use of 8251 chip?.
14. What is an USART?
15. What are the features used mode 1 in 8255?
16. What are the basic modes of operation of 8255?
17. Give the different types of command words used in 8259?
18. Give the operating modes of 8259A?
19. What is the purpose of control word written to control register in 8255?
20. What is meant by polling?

Part-B

1. Draw and explain the block diagram of 8254 programmable interval timer. Also explain the various modes of operation.
2. Explain 8279 keyboard /display controller with neat block diagram.
3. (i)Explain how to interface: (i)ADC and (ii) DAC
   (ii)Compare serial and parallel interface?
4. With neat block diagram explain the 8251 and its operating modes.
5. Draw the block diagram of I/O interface &explain in detail.
6. Explain in detail about DMA controller.
7. Explain the format of I/O mode set control and BSR control word of programmable peripheral interface. Explain in detail the operating modes of PPI?
8. Draw and explain the block diagram of traffic light control system.
9. Write short notes on LED display, LCD display,Keyboard display interface.
10. Draw and explain the block diagram of alarm controller.

Unit-IV

Part-A

1. Specify the size of memory systems used in 8051 microcontroller?
2. Mention the different operand types used in 8051
3. List the counters in 8051
4. Mention the register bank of 8051
5. How many ports are bit addressable in 8051
6. What are the hardware and software interrupts of 8051?mention its vector addresses
7. What happens in power down mode of 8051
8. What are the different ways of operand addressing in 8051
9. How do you place a specific value in the DPTR register?
10. Which is called as PSW in 8051

11. List the four siginificant features of 16-bit microcontroller?
12. What is the difference between microprocessor & micro controller?
13. List the addressing modes of 8051?
14. Explain the instructions used to access external RAM.
15. List the features of 8051 microcontroller?
16. Mention the data types of 8051
17. Name the special functions registers available in 805
18. What are the software and hardware interrupts of 8051?Mention its vector addresses.
19. How the selection of particular register bank is done in 8051?
20. Mention any two instruction of data serialization

Part-B

1. Explain the architecture of 8051 with its diagram.
2. Explain the I/O pins ports and circuit details of 8051 with its diagram.
3. Write an 8051ALP to create a square wave 66%duty cycle on bit3 of port 1.
4. With example explain the arithmetic and logic instruction of 8051 microcontroller.
5. With example explain the different instruction set of 8051 microcontroller.
6. Write a program based on 8051 instruction set to pack array of unpacked BCD digits.
7. Explain the different addressing modes of 8051
8. Write a program to bring in data in serial form and send it out in parallel form using 8051
9. Explain the data types and assembler directives of 8051
10. Explain about the register banks and special function register of 8051 in detail

Unit-V

Part-A

1. State the uses of I2C bus standard?
2. List the advantages of microprocessor based system design.
3. Nane the two classifications of stepper motor.
4. List the applications of stepper motor.
5. What is the use of stepper motor?
6. Differentiate microprocessor from microcontroller in system design.
7. How is stepper motor interfaced with 8051?
8. What are the use of PWM in motor control using microcontroller?
9. What are the features of RTC?
10. What is interrupt service routine
11. What is polling
12. Compare polling and interrupt
13. Mention the interrupt priority in 8051
14. What is signal conditioning
15. Mention the types of memory
16. What is the use of PSEN signal

17. Which registers are associated with timer programming
18. Which registers are associated with counter programming
19. Which registers are associated with serial programming
20. Define baud rate of 8051

Part-B

1. Draw the diagram to interface a stepper motor with 8051 microcontroller and explain also write an 8051 ALP to run the stepper motor in both forward and reverse direction with delay.
2. Explain how interrupts are handled in 8051.
3. Write short notes on LCD interface.
4. Write notes on 8051 serial port programming.
5. Explain about external memory interfacing to 8051
6. Write notes on 8051 timer and counter programming.
7. Draw and explain the ADC interfacing using 8051.
8. Draw and explain the DAC interfacing using 8051.
9. Explain the keyboard interfacing using 8051
10. Explain the sensor interfacing using 8051