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Question Paper Code: 50406

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Fourth Semester

Computer Science and Engineering

15UEC426 - MICROPROCESSORS AND MICROCONTROLLERS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

- In 8086 microprocessor one of the following statements is not true?
 - Coprocessor is interfaced in Max mode
 - Coprocessor is interfaced in Min mode
 - I/O can be interfaced in Max/Min mode
 - Supports pipelining
- Which one of the following ICs is used to interface Keyboard and display?
 - 8251
 - 8279
 - 8259
 - 8253
- The internal RAM memory of the 8051 is
 - 32 bytes
 - 64 bytes
 - 128 bytes
 - 256 bytes
- The start-conversion on the ADC 0804 is done by using the
 - SC
 - CS Line
 - INTR Line
 - Vref/2 Line
- What is the function of Watch dog timer?
 - Stop the microprocessors when it starts malfunctioning
 - Sets the system if the software fails to operate properly
 - Resets the system if the software to operate properly
 - None of these

PART - B (5 x 3 = 15 Marks)

- Name the different types of interrupts supported in 8086.
- What is meant by USART?

8. Draw the diagram of PSW in 8051.
9. What is the function of pin no 5, 6 in LCD?
10. Give the applications of 16F877A PIC microcontroller.

PART - C (5 x 16 = 80 Marks)

11. (a) Enumerate about the Architecture of 8086 Microprocessor with a block diagram and also explain its functions in detail. (16)

Or

- (b) Explain the various addressing modes available in 8086. Also Explain each mode with an example. (16)

12. (a) With neat block diagram explain the 8255 Programmable Peripheral Interface and its operating modes. (16)

Or

- (b) Specify a neat diagram Discuss briefly about the internal architecture and registers of 8259 Programmable Interrupt Controller. (16)

13. (a) (i) Explain the TMOD function register and its timer modes of operations. (8)

- (ii) Evaluating about the various interrupts and their associated priorities in 8051 microcontroller. (8)

Or

- (b) Write an assembly language program for 8051 to transfer letter "SIT" serially at 9600 baud rate continuously. Assume that XTAL 11.0592 MHz. (16)

14. (a) Describe with a program to rotate the stepper motor in both clockwise and anticlockwise direction using 8051 microcontroller. (16)

Or

- (b) Discuss how to interface a 4 x 4 matrix keyboard using 8051 microcontroller and explain how to identify the key press. (16)

15. (a) What are the functional blocks available in PIC microcontroller 16F877A? Explain with a block diagram. (16)

Or

- (b) Explain the function of 16F877A PIC microcontroller instructions for performing arithmetic and logical operations with suitable example. (16)