C 80774   (Pages : 2)   Name..............

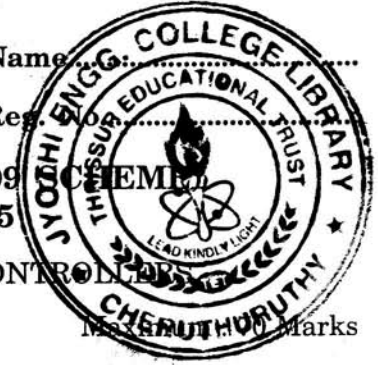   Reg..............

SIXTH SEMESTER B.TECH. (ENGINEERING) (09 SCHEME) DEGREE EXAMINATION, APRIL 2015

EE/PTEE 09 601—MICROPROCESSORS AND MICROCONTROLLERS

Time : Three Hours   Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 2 marks.

1. Mention *two* essential difference of 8086 when compared with its predecessors

2. What is meant by Assembler directives ?

3. What is hand shaking mode of operation of 8255 ?

4. Write a Jump instruction of 8051.

5. Write two features of Special Function Register Memory of 8051 processor.

                                                             (5 × 2 = 10 marks)

Part B

Answer any four questions.
Each question carries 5 marks.

6. Sketch and explain the timing diagram of a READ instruction.

7. Briefly explain the concept of pipelining and queue.

8. What is a time delay loop ? Write a delay loop and explain its instruction for generating a delay of more than 10ms.

9. Briefly explain the concept of Direct Memory Access.

10. Explain the structure of the control word of 8255. How 8255 is configured for different modes ?

11. Describe the alternate functions of port 3 of 8051 microcontroller.

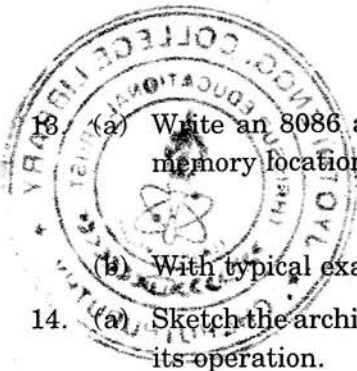   (4 × 5 = 20 marks)

Part C

Answer four full questions.
Each question carries 10 marks.
Missing data may suitably be assumed.

12. (a) Give the pin diagram of 8086 and explain the function of each pin. Also the functions of 8086 microprocessor in minimum and maximum mode configurations.

                                    Or

    (b) Explain the different types of interrupts and their priority in 8086.

    (c) Explain the internal registers of a Pentium processor.

                                                             Turn over

13. (a) Write an 8086 assembly language program to sort a set of numbers stored in consecutive memory location in ascending order. Also explain the algorithm used.

Or

(b) With typical examples, explain all the addressing modes of 8086.

14. (a) Sketch the architectural block diagram of 8259 Programmable interrupt controller and explain its operation.

Or

(b) Explain the architecture, operating modes and programmming of 8251 serial interface.

15. (a) Define and explain the details of interrupts in 8051 microcontroller.

Or

(b) Draw and explain the diagram to interface a stepper motor with a 8051 microcontroller. Write an ALP to run the stepper motor in both forward and reverse direction on with delay.

(4 × 10 = 40 marks)