C 28735

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2012

EE 04 602 – MICROPROCESSORS AND MICRO CONTROLLERS

Time : Three Hours

Maximum : 100 Marks

1. (a) Define the addressing modes of 8086. Give one example for each mode.

   (b) Draw the minimum mode configuration of 8086 and list the features.

   (c) Explain in brief the modes of operation of 8253 programmable timer.

   (d) State the purpose of initialization command words and operation command words of 8259.

   (e) What are the special features of Pentium processors?

   (f) With example, explain the real addressing mode of 80386 processor.

   (g) Name the instructions of 8051 used to access external RAM, external program memory.

   (h) Differentiate the Jump instructions of 8051.

   (8 × 5 = 40 marks)

2. (a) Discuss in detail the interrupt structure of 8086.

   (15 marks)

   Or

   (b) (i) Compare loosely coupled and closely coupled configurations.

   (ii) Enumerate on the features of 8087 numeric data processor.

   (5 + 10 = 15 marks)

3. (a) Discuss the organisation and architecture of 8251 USART with functional block diagram.

   Or

   (b) Interface a 16 keys keyboard and six 7-segment LEDs to 8086 using 8279. Write a program to read the keyboard and store the key read in location KEY BUF.

   (15 marks)

4. (a) With block diagram, explain the architecture of 80286 microprocessor.

   Or

   (b) Describe the operation of 8253 programmable counter/timer and write the instructions necessary to initialize 8253 for a specified application.

   (15 marks)

5. (a) Explain memory structure of 8051.

   Or

   (b) With schematic, show how 8051 is used to control the speed of a D.C. motor.

   (15 marks)

   [4 × 15 = 60 marks]