Reg. No. .... (Pages: 2) **K4531**

Name. ....

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION
MAY/JUNE – 2006
Branch II - Physics

PH 243 E – ELECTRONICS - II

Time: 3 Hours   Max. Marks: 75

PART - A
Answer any five questions. Each question carries 3 marks.

I. a. What is register indirect addressing?

   b. What is the main improvement in 80486 when compared to 80386 processor?

   c. Which instructions are used to address the I/O ports in an 8088 processor?

   d. Define and describe the difference between knowledge and data.

   e. Explain what is a heuristic function.

   f. Compare digital and analog filters.

   g. Explain the advantages of adaptive filters.

   h. Explain the use of fractals in signal processing.

                                                    (5 x 3 = 15 Marks)

PART – B
Answer all questions. Each question carries 15 marks.

II. A. (a)   Using suitable diagrams, describe the structure and functions of the registers in the 8086 microprocessor.   **(10 Marks)**

   (b)   How the 80386 registers are different from 8086 registers?   **(5 Marks)**

OR

II. B. (a)   Discuss with examples the addressing modes in the 8086 microprocessor.   **(10 Marks)**

   (b)   Show how to compute a physical address from segment and offset values.   **(5 Marks)**

III. A. (a) Discuss the knowledge acquisition and knowledge representation aspects of the expert systems. **(10 Marks)**

(b) What is frame based system? **(5 Marks)**

OR

III. B. (a) Review the introductory aspects of AI languages. **(10 Marks)**

(b) What is perception learning? **(5 Marks)**

IV. A. (a) Discuss Fourier transform and its properties. **(10 Marks)**

(b) What are the applications of Fourier transform. **(5 Marks)**

OR

IV. B. (a) Compare digital and analog signal processing. **(10 Marks)**

(b) Explain sampling theorem. **(5 Marks)**

(3 x 15 = 45 Marks)

PART - C

Answer any three questions. Each question carries 5 marks.

V. a. Write instructions for storing the content of AX and BX registers in the Stack area of the memory.

b. Suppose DS = 1100H, SS = 2000H, BP = 1000H and DI = 0100H.
Determine the memory address accessed by the instructions MOV AL,
[BP + DI] and MOV CX, [DI].

c. Give an example to illustrate the idea of forward chaining.

d. Give an example of a typical expert system.

e. Give the Fourier transform of a square wave.

f. Estimate the resolution of a 12 bit A/D converter.

(3 x 5 = 15 Marks)