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BT-7/D-19 37015

ADVANCED MICROPROCESSORS
ECE-423E

Time : Three Hours] [Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. (a) Explain the concept of pipelining for X86 microprocessors. Support your answer with a suitable diagram and explain the different stages of pipelining. **10**

   (b) Define data format and give all the data formats supported by Pentium Processor. **10**

2. (a) With the help of a suitable diagram explain in detail the functioning of all the registers present in X86 families of processors. **5**

   (b) Draw the Instruction format of Pentium processor and explain the function of each bit. **5**

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   (c) Explain in detail the concept of memory segmentation in Pentium Processor ? Explain in detail the segmentation scheme used in protected mode for X86 microprocessor processors. **10**

Unit II

3. (a) Draw the internal architecture of 80386 microprocessor and explain its functioning in detail. **15**

   (b) A page linear address for IA-32 processor is 23415623H. Formulate a physical address out of it and represent the conversion with the help of a diagram. **5**

4. (a) Explain the functioning of different pins of 80286 Processor. http://www.kuonline.in **15**

   (b) Draw and explain the system segment descriptors used in 80286 processor. **5**

Unit III

5. (a) Draw the internal architecture of the mathematical co-processor for 80286 and also explain the register set of the co-processor. **10**

   (b) Interface 80286 with its numeric co-processor and show the necessary block diagram for the same. **10**

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6. (a) Explain the different instructions supporting transcendental operations. Also explain the functioning of different control instructions for 80286 microprocessor. **10**

   (b) Explain the functioning of different pins of 80286 microprocessor. **10**

Unit IV

7. (a) Define interrupts and explain the interrupt structure for X87 family of processors. **10**

   (b) Draw the internal architecture of 80487 microprocessor and explain its functioning in detail. **10**

8. Explain the following :

   (a) Protection Mechanism **5**

   (b) Assembler Directives **5**

   (c) Branch Prediction **5**

   (d) 80387 Microprocessor. **5**

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