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(Following paper code and roll No. to be filled in your answer book)	
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M.Tech.

FIRST SEM. EXAMINATION, 2010-11

Time: 3hrs. *Max. Marks: 100*

Subject: *ADVANCED MICROPROCESSOR AND APPLICATIONS*

Note: *(1) Attempt all questions.*
(2) All questions are equal marks.
(3) Notations used have usual meaning.
(4) Assume any relevant data, if missing.

Q.1 Answer any two of the following: (2x10=20)

(a) Elaborate the various operations performed by a microprocessor. How various operations are categorized?
(b) Discuss the register organization of a 32bit Intel microprocessor. Point out the role of each register.
(c) What do you understand by pipelining? How is it achieved in Intel 8086 microprocessor? Discuss.

Q.2 Answer any two of the following: (2x10=20)

(a) Define interrupt? What is interrupt vector? Draw the hardware and software interrupt vector table of Intel 8085 microprocessor.
(b) Discuss the architectural features of Intel 8086 microprocessor. Draw the functional block diagram and discuss the function of its various units.

(c) Draw the timing diagram for memory read bus cycle of Intel 8086 microprocessor for the minimum mode of operation.

Q.3 Answer any two of the following: (2x10=20)

(a) Discuss the architectural features of Intel 8255A programmable peripheral interface(PPI). Explain different operating modes of the PPI.

(b) Explain the architectural diagram of the programmable communication interface 8251 along with its applications.

(c) Define addressing mode. Describe the various addressing modes available with the 8086 microprocessor.

Q.4 Answer any two of the following: (2x10=20)

(a) What are the functions of following?
(i) Instruction Pointer (ii) Semaphore (iii) Instruction Queue (iv) ALE (v) HOLD.

(b) Explain the working of dynamic RAM (DRAM) with the help of a simple basic dynamic cell. Also, discuss the advantages and disadvantages of DRAM over SRAM.

(c) Draw the complete block diagrams showing the interfacing schemes for interfacing four 8K EPROMs, two 4K RAMs with 8085 or 8086 microprocessor indicating all the required control signals.

Q.5 Answer any two of the following: (2x10=20)

(a) Describe following:
(i) DAC converter (ii) Sample and hold circuit

(b) What is difference between microprocessor and microcontroller? Discuss the architectural features of an 8-bit microcontroller.

(c) Draw the schematic diagram of microprocessor based temperature control. Discuss the scheme of interfacing. Draw flowchart and write an assembly language program to simulate the controller.