GANPAT UNIVERSITY

B. Tech. Semester IV Electronics & Communication Engineering Examination, May-June 2012

2EC404 : Microprocessor Architecture & Programming

TIME: 3 HOURS]   [TOTAL MARKS: 70

INSTRUCTIONS:
1. Attempt all questions.
2. Answers to the two sections must be written in separate answer books.
3. Figures to the right indicate full marks.
4. Assume suitable data, if necessary.

SECTION-I

Q:1	(A)	Draw the timing diagram for execution of the instruction MVI A,54H	6
	(B)	Explain the generation of Read/Write control signals for I/O and Memory with the help of schematic.	6

OR

Q:1	(A)	Draw the memory classification diagram and explain each type in brief.	6
	(B)	Draw and explain the pin diagram of 8085 microprocessor.	6

Q:2	(A)	The memory location 5010H holds the data byte 7FH. Write instructions to transfer the data byte to the accumulator using three different opcodes: MOV, LDAX and LDA. Illustrates them with the help of block diagrams.	6
	(B)	Explain the generation of timing delay using one register with help of flow chart and ALP.	5

OR

Q:2	(A)	The memory location 3050H holds the data byte EEH. Write instructions to transfer the data byte to the accumulator using three different opcodes: MOV, LDAX and LDA. Illustrates them with the help of block diagrams.	6
	(B)	Explain the generation of timing delay using register pair with help of flow chart and ALP.	5

Q:3	(A)	List out & explain the Logical Instructions with the help of illustrations.	6
	(B)	Classify 8085 interrupts and explain them in brief.	6

Q:4 **(A)** What is the purpose of latch for microprocessor? Explain how control signal MEMR, MEMW, IOW, IOR is generated. **5**

(B) Draw the memory chip address range of 4k (4096x8) with staring address is 2000H.also specify last address. **4**

(C) Explain the 3-to-8 line decoder with logic diagram and functional table. **3**

OR

Q:4 **(A)** Explain the operating system with hierarchical relationship between computer hardware and software. **5**

(B) Draw the memory chip address range of 2k (2048x8) with staring address is B000H, also specify last address. **4**

(C) Explain the concept of subroutine using CALL and RET instruction. **3**

Q:5 **(A)** Draw the timing diagram for instruction IN 30H. Also calculate the total time required for execution of this instruction when clock frequency is 2 MHz. **7**

(B) State differences between compiler and interpreter. **4**

OR

Q:5 **(A)** Draw the timing diagram for instruction OUT 30H. Also calculate the total time required for execution of this instruction when clock frequency is 6 MHz. **7**

(B) List out differences between machine language, assembly language and high-level language. **4**

Q:6 **(A)** State and explain the function of 8237 in detail with block diagram. **6**

(B) State and explain the function of 8259 in detail with block diagram. **6**

End of Paper