

pen-ee-9465

JAYPEE UNIVERSITY OF INFORMATRION TECHNOLOGY, WAKNAGHAT
TEST -3 EXAMINATION- Jun 2016
B.Tech(CSE) IV Semester

COURSE CODE: 10B11CI401

MAX. MARKS: 35

COURSE NAME: Microprocessors and Controllers

MAX. TIME: 2 HRS

COURSE CREDITS: 4

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q.1. [5 Marks. Each question is half mark]

- Explain sequentially, the T states for memory read operation.
- List the flags used in 8086?
- Differentiate between maskable and non-maskable interrupts?
- What is Tri-state logic?
- Explain the difference between a JMP and CALL instruction?
- What support is available in 8086 for interrupt handling?
- Differentiate between ISR and a subroutine.
- Explain the functions of PSW and TCON special function registers of 8051.
- List the interrupts in 8051 in order of default priority from high to low.
- What is REPZ prefix? How does it function for string instructions?

Q.2. [5 marks] Design memory interfacing for 8086 microprocessor with following specifications. List the design steps clearly.

Size of memory- 256 KB.

Address- Low end of the real mode address space.

Components-16 KB memory chips.

Bank Selection- by separate address decoder.

Other data if required may be assumed suitably.

Q.3. [5 marks] Interface a modem with 8086 using following parameters.

Clock frequency: 18Mhz

Baud Rate: 1800

Data length: 6 bits

Parity: EVEN

Stop Bits: 2

Other data if required may be assumed suitably.

Q.4. [5 marks] Explain need for an interrupt Controller 8259. List sequence of operations for handling an interrupt by 8086. Show hardware interfacing of 8259 with 8086.

Q.5. [5 marks] Describe internal architecture of 8254 counter/timer. Explain with example, its operation as an event counter.

Q.6. [5 marks] Explain the operation of 8255(PPI) in different modes of operation.

Q.7. [5 marks] It is proposed to build a room temperature control system using 8051 microcontroller. Show the hardware and software interfacing of your design.