III B.Tech II Semester Examination – April/May, 2018

**MICROPROCESSORS AND INTERFACING**

Time: **3** hours (CSE) Max. Marks: **60**

# SECTION – A

(Short Answer Questions)

**Answer all ten questions 10×1M=10M**

1. The 8086 fetches instruction one after another from \_\_\_\_\_\_\_\_\_\_ part of the memory.
2. MOV CL, 02H is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_ addressing mode.
3. In max mode, control bus signal So, S1 and S2 are sent out in \_\_\_\_\_\_\_\_\_\_\_\_ form.

a) decoded b) encoded c) shared d) unshared

1. Which microprocessor has multiplexed data and address lines?

a) 8085 b) 8086 c) both a & b d) none of these

1. In 8255 \_\_\_\_\_\_\_\_\_\_\_ mode is used to perform bidirectional operation

a) 0 b) 1 c) 2 d) 3

1. The \_\_\_\_\_\_\_\_\_ is a Programmable Interrupt Controller.

a) 8259 b) 8279 c) 8255 d) none of these

1. Which 8086 microprocessor pins are used to request and acknowledge a DMA transfer?

a) reset and ready b) ready and wait c) HOLD and HLDA d) None of these

1. 8251 is a\_\_\_\_\_\_\_\_\_\_\_\_\_

a) Universal synchronous asynchronous receiver transmitter

b) Universal synchronous receiver transmitter

c) Universal synchronous asynchronous transmitter

d) None of these

1. The 8051 microcontroller has \_\_\_\_\_\_\_\_\_ Bytes of internal RAM.
2. In 8051 AJMP is a \_\_\_\_\_\_\_\_\_\_ jump instruction.

**SECTION – B**

**Answer all five questions 5×2M= 10M**

1. What are the predefined interrupts in 8086?
2. What is the purpose of segment registers in 8086?
3. Explain why serial data transfer is mostly preferred over parallel data transfer.
4. What are the different command words in 8259?
5. Name any four additional hardware features available in microcontrollers when compared to microprocessors.

**SECTION – C**

**Answer all four questions 4×5M = 20M**

1. What are the loop instructions of 8086?

**(OR)**

1. Explain any five addressing modes of 8086 with examples.
2. Discuss various branch instructions of 8086 microprocessor that are useful for relocation.

**(OR)**

1. Write an assembly language program to find one’s complement and two’s complement of an 8-bit number
2. Draw and explain the block diagram of programmable interrupt controller 8259.

**(OR)**

1. Write a note on interfacing analog to digital converter with 8086.
2. What happens when signal on pin in 8051 microcontroller goes low?

**(OR)**

1. How are the pins P0 and P2 in 8051 microcontroller used as data bus, address bus and also used as Input Output Port?

**SECTION – D**

**Answer all two questions 2×10M= 20M**

1. Distinguish between a memory read and write machine cycle. Draw the timing diagrams in minimum and maximum modes of operation for read machine cycle.

**(OR)**

1. Draw the pin diagram of 8086 and explain all the minimum mode pins in detail.
2. With functional block diagram, explain the operation and programming of 8251 USART in detail.

**(OR)**

1. Discuss the architecture of DMA controller. Also explain different modes of operations of DMA controller