III B.Tech. II Semester Examinations, June-2016

**MICROPROCESSORS AND INTERFACING**

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

# SECTION – A

(Short Answer Questions)

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

1. To maximize 8086 processor performance, a data word should be stored beginning at ------------------------- memory address.
2. If, following an addition, register AX=00eH, executing the AAA instruction will cause register AX to become -----------.
3. When accessing a memory location shared with a coprocessor, which of the following signals prevents the coprocessor from also accessing that location?
4.  (b)  (c)  (d) 
5. When the 8086 is wired for the maximum mode, the 8288 bus controller decodes ---------------- to generate the system control bus.
6. What is meant by full duplex communication?
7. Expand USART.
8. When operated in the minimum mode, the 8086 uses the ------------- and ---------------- handshaking signals to allow the DMA controller to gain the control of the system buses.
9. If the poling is used to input the characters from 8251, the ------------ status bit should be tested before each character is input.
10. The 8051 has bank of --------- bytes of internal RAM.
11. When the 8051 accesses external memory it will accesses external data memory at the address indicated by --------------

**SECTION – B**

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

1. What is need for DMA.
2. What frequency is required for a baud rate of 1200, assuming that the 8251 is programmed for a  clock? What does the baud rate become if the 8251 is reprogrammed for a  clock?
3. What are the other functions of Port 3 in 8051.
4. For the software interrupt INT2, calculate the address of the locations from where the values of IP and CS are loaded.
5. Write any four features of 8051 Microcontroller.

**SECTION – C**

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

16. With the help of timing diagram explain the memory write operation of 8086.

**(OR)**

17. Interface 4kB of ROM and 16kB of RAM to 8086. Show the memory map details.

18. Explain the functions of exclusive minimum mode signal of 8086.

**(OR)**

19. Explain the functions of exclusive maximum mode signal of 8086.

20. Draw the block diagram of 8257 DMA controller and explain the functions of each block.

**(OR)**

21. Explain the functions of the following pins of 8251:

(i) RxRDY (ii) TxRDY (iii) TxD (iv) RxD (v) TxE

22. Explain the internal and external memory organization of 8051.

**(OR)**

23. Explain the various addressing modes of 8051 with examples.

**SECTION – D**

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

24. Draw the architecture of 8259 PIC and explain the functions of each block.

**(OR)**

25. a) Explain various modes of 8255 with examples.

b) Interface 8255 to 8086 as per the following details

Port A :C0H; Port B: C2H; Port C: C4H; CWR: C6H

26. Explain the following 8086 instructions with examples:

(i) AAM (ii) DIV CL (iii) IRET (iv) LOCK (v) LODSB

**(OR)**

27. Write an 8086 assembly program to find the largest number from the given series of 9 numbers.