AA-205

M. Tech. EXAMINATION, Dec. 2017

(First Semester)

(B. Scheme) (Main & Re-appear)

(BME)

BME-509

MICROPROCESSOR AND

MICROCONTROLLER FOR MEDICAL

INSTRUMENTATION

Time : 3 *Hours*]   [*Maximum Marks :* 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) Explain in detail about the system bus timing of 8086. **10**

   (b) With the help of flow chart explain the interrupt processing sequence of 8086 CPU. **10**

2. (a) Explain the following 8085 instructions with an example LDA, XCHG, IN, SUI, XRA, STC, DDA, XCHG, SPHL and PCHL. **10**

   (b) Draw the timing diagram for the instruction MVI A, 32 H and out 0.1 H. **10**

3. (a) Explain the architecture of 8051 microcontroller with neat diagram. **10**

   (b) Describe the different modes of operation of timers/counter in 8051 with its associated register. **10**

4. (a) Draw the architecture of 8237 and explain the various parts. **10**

   (b) Highlight on different modes of DMA data transfer. Which mode consumer the list power and which mode is the fastest ? **10**

5. Write notes on the timing margins of high sped circuits. What are clocks skew and clock jitter ? How do they from earth other ? Explain. **20**

6. Discuss the interfacing of blood pH sensor with microcontroller. **20**

7. Briefly explain the input and output interfacing techniques used in 8085 microprocessor. **20**

8. Discuss the basic application of microprocessor in biomedical engineering. **20**