

Code No: **R32024****R10****Set No. 1**

**III B.Tech II Semester Supplementary Examinations, April -2017**  
**MICROPROCESSORS AND MICRO CONTROLLERS**  
(Electrical and Electronics Engineering)

**Time: 3 hours****Max. Marks: 75**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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- 1 List some applications of microprocessors. With a neat diagram, explain the internal architecture of the 8086 microprocessor. [15M]
- 2 With neat circuit diagram and timing diagrams, explain the maximum mode operation of 8086 microprocessor. [15M]
- 3 a) Write an assembly language program in 8086 to arrange the given 16-bit hexadecimal numbers in descending order. [9M]  
b) What are macros? Explain with examples. [6M]
- 4 a) With a neat block diagram, explain the operation of ADC 0808. [7M]  
b) Interface digital to analog controller DAC AD7523 with an 8086 operating at 8 MHz and write an assembly language program to generate a triangular waveform of period 2 ms with  $V_{max}$  5V. [8M]
- 5 Interface two chips of 32KX8 ROM and four chips of 32KX8 RAM with 8086 according to the following map. [15M]  
ROM 1 and 2: F0000H – FFFFFH  
RAM 1 and 2: D0000H – DFFFFH  
RAM 3 and 4: E0000H – EFFFFH  
Show the implementation of this memory system.
- 6 a) What are I/O ports? Explain its purpose. [6M]  
b) Discuss the internal memory organization of 8051 microcontroller. [9M]
- 7 a) What is an instruction cycle? Explain. [5M]  
b) List and explain different data and bit manipulation instructions of 8051 microcontroller with examples. [10M]
- 8 a) Explain the functioning of a seven segment display. [6M]  
b) Explain the interfacing of a seven segment display to 8051 microcontroller. [9M]

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