

Code: 13A04601

B.Tech III Year II Semester (R13) Regular Examinations May/June 2016

**MICROPROCESSORS & MICROCONTROLLERS**

(Common to EEE, ECE and EIE)

Time: 3 hours

Max. Marks: 70

**PART – A**  
(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) Explain the function of ALE in 8085 microprocessor.
  - (b) What are the different hardware interrupts of 8085?
  - (c) Name any four flags in 8086.
  - (d) What is the use of instruction queue in 8086 microprocessor?
  - (e) Mention the functions of SI and DI.
  - (f) What is meant by software interrupt in 8086?
  - (g) What are the various modes of data transfer?
  - (h) What is the function of scan section in keyboard interface?
  - (i) What are the advantages of microcontroller over microprocessor?
  - (j) Name the five interrupt sources of 8051 microcontroller.

**PART – B**  
(Answer all five units, 5 X 10 = 50 Marks)**UNIT – I**

- 2 (a) Draw the timing diagram and explain the execution of the instruction IN 82H of 8085 microprocessor.  
(b) Name and explain different addressing modes used in 8085 using suitable examples.

**OR**

- 3 How 8085 instructions are classified according to their functional categories? Explain with examples.

**UNIT – II**

- 4 Explain with neat diagram the internal architecture of 8086 microprocessor.

**OR**

- 5 Explain in detail about 8086 interrupts.

**UNIT – III**

- 6 Write an assembly language program in 8086 to sort an array of 10 numbers in ascending order.

**OR**

- 7 (a) Explain various assembler directives with examples.  
(b) Write an assembly language program in 8086 to convert BCD data into binary data.

**UNIT – IV**

- 8 With neat functional block diagram, explain the 8255 programmable peripheral interface and its operating modes.

**OR**

- 9 Draw the block diagram of 8254 programmable interval timer and explain its various modes of operation.

**UNIT – V**

- 10 Describe the different modes of operation of timers/counters in 8051 with its associated register.

**OR**

- 11 Explain the architecture of 8051 microcontroller with neat diagram.

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