

Code No: 55030

R09

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, November - 2015

MICROPROCESSORS AND INTERFACING

(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 75

Answer any five questions

All questions carry equal marks

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- 1.a) Draw the flag register format of 8086 and state when each flag is set.  
b) Explain the following pins of 8086.  
(i)  $\overline{MN/MX}$  (ii)  $\overline{TEST}$  (iii)  $\overline{BHE}$  (iv)  $\overline{DEN}$  [7+8]
- 2.a) Write an ALP to find minimum value of an array of 100 unsigned 16-bit numbers using indexed addressing.  
b) Discuss any four string instructions in 8086. [7+8]
- 3.a) What is the need of programmable interrupt controller? Explain how the interrupt mechanism is achieved.  
b) List in general terms the steps that 8086 will take when it responds to an interrupt. [7+8]
- 4.a) Develop hard ware and soft ware for interfacing an 8-bit ADC to 8086 processor.  
b) Interface an 8-bit DAC to 8086 and write a program to generate 10 KHz square wave at the DAC output. [7+8]
- 5.a) Draw the interfacing diagram of 8259 programmable interrupt controller to 8086 microprocessor.  
b) Discuss about cascading of interrupt controller and its importance. [7+8]
- 6.a) What is the need for conversion of TTL to RS232C. With the help of diagram explain the conversion.  
b) Write a program to generate 1 KHz rectangular wave with duty cycle 40%. [7+8]
- 7.a) Explain the interrupts of 8051 with priority and vector table.  
b) Write a program to double the number in register R<sub>0</sub> and put the result in R<sub>3</sub> and R<sub>4</sub>. [7+8]
- 8.a) Explain various steps involved in 8051 Timer Mode 2 Programming.  
b) Interface 16K×8 ROM to 8051 MC and explain. [7+8]

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