Code No: 126AK

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, December - 2017
MICROPROCESSORS AND INTERFACING DEVICES
(Electrical and Electronics Engineering)

Time: 3 hours   Max. Marks: 75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a) What is the function of ALE signal in minimum mode of 8086?   [2]
 b) How does 8086 MP implements the pipeline process?   [3]
 c) Which instruction of 8086 can be used for look up table manipulation?   [2]
 d) What is meant by LOCK prefix? What are uses of it?   [3]
 e) What is meant by interrupt vector table of 8086?   [2]
 f) What are the advantages of DMA controller?   [3]
 g) What is the function of SYNDET/BD signal of 8251?   [2]
 h) Compare and contrast IEEE 488 and SPI bus.   [3]
 i) What is the function of timers and counters?   [2]
 j) Write the advantage of 8051microcontroller over the 8086 microprocessor.   [3]

PART - B

(50 Marks)

2.a) Describe the register organization of 8086 family microprocessor.
 b) Explain how do you calculate effective physical address using segment address and offset.   [5+5]

OR

3. Draw and explain operation of the each block for the maximum mode of microprocessor with necessary time diagrams and explain the function of each signal which is applicable in maximum mode operation of 8086.   [10]

4.a) Explain the addressing modes for control transfer instructions.
 b) Explain the significance of jump and loop instructions of 8086.   [5+5]

OR

5. Explain the all assemblers and operators available in 8086 with suitable examples. [10]

6.a) Describe the interrupt request response of the 8086 in detailed.
 b) Describe the procedure for interfacing of Analog to digital converter with 8086 microprocessor with relevant diagrams.   [5+5]

OR

7.a) Draw and explain the internal architecture of 8259.
 b) Describe the control word format of 8255 for I/O and BSR mode.   [6+4]

8.a) Briefly explain the serial data transfer standards for interfacing of devices.
  b) Explain the operation of IEEE 488 with neat block diagrams. [5+5]

OR

9.a) Draw and explain the synchronous mode transmitter and receiver data formats of USART 8251.
  b) Discuss briefly the concept of prototype and trouble shooting. [5+5]

10. Draw the internal architecture of 8051 and explain the operation of each block. [10]

OR

11.a) Describe the internal and external RAM organization of 8051 in detailed.
  b) Explain the different arithmetic instructions of 8051 in detailed. [5+5]

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