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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, April - 2018
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)   Explain the difference between 8085 and 8086 microprocessors.   [2]
  b)   List out the different Minimum mode signals present in 8086 microprocessor in detail.
                                                                                  [3]
  c)   Define instruction.   [2]
  d)   Define Addressing and what are different types of address mode.   [3]
  e)   Define the terms maskable and Non-maskable Interrupt of 8086 Microprocessor. [2]
  f)   Write short notes on 4-phase Stepper Motor.   [3]
  g)   What is Serial and Parallel communications in detail?   [2]
  h)   List out the few comparisons of Synchronous and Asynchronous communications in detail.   [3]
  i)   Explain the different applications if Microcontroller in present generation. [2]
  j)   List out the few features of 8051 Microcontroller in detail.   [3]

PART - B
                                                                                  (50 Marks)

2.a)   Define segmentation and list out the different Segmentations present in 8086 Microprocessor in detail.
  b)   Draw and explain the different Registers along with its organizations in detail.   [5+5]
                                      OR
3.a)   Define Flag? Explain the different Flags present in 8086 microprocessor along with frame format.
  b)   Draw the Timing Diagram of Maximum mode Read operation and explain its operation.   [5+5]

4.a)   Explain the different String manipulation instruction present in 8086 microprocessor in detail.
  b)   Write an Assembly language program for Find the positive and negative numbers in an 8-bit array.   [5+5]
                                      OR
5.a)   List out the different Data transfer instructions present in 8086 Microprocessor and explain each one in detail.
  b)   Write an Assembly language program for Find the Even and Odd numbers in an 8-bit array.   [5+5]

6.a) What is DMA? Draw the internal architecture of 8257 DMA and explain its operation in detail.

b) Draw the internal architecture of 8255 PPI and explain its operation along with mode of operation. [5+5]

OR

7.a) Draw the interfacing Diagram of A/D converter with 8086 Microprocessor and write an assembly code for it along with explanation.

b) Draw the frame format of BSR and I/O mode of 8255 PPI and explain each bit of in it.

[5+5]

8.a) List out the different serial communication standards? Explain the synchronous serial communications with circuit diagram.

b) Define Trouble shooting? List out different software debugging tools present in Microprocessor in detail. [5+5]

OR

9.a) Draw the PIN diagram of RS-232 serial commination and explain the function of each pin in detail.

b) List out different methods of data communications and explain each one with example.

[5+5]

10.a) Draw the PIN diagram of 8051 Microcontroller and explain function of each pin in detail.

b) Explain the following special function registers in detail. [5+5]
(i) IE and IP   (ii) SCON

OR

11.a) Draw the internal RAM memory organization of 8051 Microcontroller and explain its operation.

b) How many I/O Ports present in 8051 Microcontroller and explain the function of each Port in detail. [5+5]

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