R15

Code No: 126VM

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, December - 2018
MICROPROCESSORS AND MICROCONTROLLERS
(Common to ECE, ETM)

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)	List the hardware and software interrupts of 8086 microprocessor.	[2]
b)	What are the conditional and control flags of 8086 microprocessor ?	[3]
c)	Define macro with example.	[2]
d)	Write instruction format of 8086 microprocessor.	[3]
e)	Draw the frame format of I/O modes of 8255 PPI.	[2]
f)	What are the methods of serial communication of 8251 USART?	[3]
g)	Write briefly the evolutions of microcontroller.	[2]
h)	Draw the frame format of PSW.	[3]
i)	What is the serial communication interrupts of 8051 microcontroller?	[2]
j)	List the various applications of 8051 microcontroller.	[3]

PART - B

(50 Marks)

2.a) Draw the internal architecture of 8086 microprocessor and explain its operation in detail.
b) Draw the timing diagram of minimum mode read operation and explain it operation. [5+5]

OR

3.a) Write the advantages of memory segmentation of 8086.
b) Draw and explain each signal function of 8086. [5+5]

4.a) Explain the different addressing modes used in 8086 microprocessor with examples.
b) Explain the difference between procedure and macros used in 8086 microprocessor. [5+5]

OR

5.a) Write an assembly language program to find sum of squares of first ten numbers.
b) List out the shift and rotate instructions of 8086 microprocessor with examples. [5+5]

6.a) Draw the internal architecture of 8251 USART and explain its operation.
b) Draw the interrupt vector table and explain its operation. [5+5]

OR

7.a) Explain the interrupt service routines of 8086.
b) Draw the interfacing diagram of D/A convertor with 8086 CPU and explain its operation. [5+5]

8.a) Explain the concept of memory organization of 8051 microcontroller.
b) Draw the frame format of SCON and PCON registers and explain it. [5+5]

OR

9.a) Draw the pin Diagram of 8051 microcontroller and explain the function of each pin in detail.
b) Draw the internal RAM organization of 8051 microcontroller and explain it. [5+5]

10.a) Define interrupt and Explain different software interrupts used in 8051 microcontroller.
b) Explain the concept of timers and counter of 8051 microcontroller. [5+5]

OR

11.a) List out the different instruction set of 8051 microcontroller and explain with examples.
b) Write an assembly language program for serial communication in 8051 microcontroller with suitable example. [5+5]

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