Code No: RT32041 **R13** **SET - 1**

III B. Tech II Semester Regular Examinations, April - 2016

MICRO PROCESSORS AND MICRO CONTROLLERS

(Common to ECE, EIE and E.Comp.E)

Time: 3 hours Maximum Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	Draw the flag register of 8086 microprocessor and explain the function of each flag.	[4M]
	b)	Define interrupt and explain the different interrupts presented in 8086 microprocessor.	[4M]
	c)	Explain the differences between synchronous and asynchronous serial communication.	[4M]
	d)	List out the salient features of 80386 processor.	[3M]
	e)	Explain the concept of addressing modes used in 8051 microcontroller	[4M]
	f)	List out the salient futures of PIC 16C61 controller.	[3M]

PART -B

2	a)	Draw the minimum mode pin diagram and explain the function of each pin in detail.	[8M]
	b)	Explain any six assembler directives used in 8086 microprocessor.	[4M]
	c)	Draw the timing diagrams of minimum mode write operation and explain in detail.	[4M]
3	a)	Write an assembly language program to find the largest number of an array 8-bit array.	[8M]
	b)	Explain different maskable and non maskable interrupts of 8086 microprocessor.	[8M]
4	a)	Draw the internal architecture of 8259 PIC and explain the operation of each block in detail.	[8M]
	b)	Explain ICW's and OCW's of 8259 Priority interrupt controller.	[8M]
5	a)	Explain the Real mode and protected mode concepts of 80386 Microprocessor.	[8M]
	b)	Draw the EFLAG register of 80386 processor and explain the function of each flag with example.	[8M]
6	a)	Draw the pin diagram of 8051 microcontroller and explain the function of each pin in detail.	[8M]
	b)	Explain the differences between microprocessor and microcontroller.	[8M]
7	a)	Explain different I/O ports presented in PIC controller and draw the necessary diagram for it.	[8M]
	b)	Explain the feature of ARM controller in detail.	[8M]

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Code No: RT32041 **R13** SET - 2

III B. Tech II Semester Regular Examinations, April - 2016

MICRO PROCESSORS AND MICRO CONTROLLERS

(Common to ECE, EIE and E.Comp.E)

Time: 3 hours Maximum Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	List different registers of 8086 microprocessor.	[3M]
	b)	Define interrupt and explain the different software interrupts presented in 8086 microprocessor.	[4M]
	c)	Explain the methods of serial communications with examples.	[4M]
	d)	List out the different data types of 80386 processor.	[3M]
	e)	Explain the different features of 8051 microcontroller.	[4M]
	f)	List out the salient features of PIC 16F8XX Flash controller.	[4M]

PART -B

2	a)	Draw the timing diagrams of minimum mode read operation and explain in detail.	[4M]
	b)	Define addressing mode and explain different addressing modes presented in 8086 microprocessor.	[8M]
	c)	Explain the data transfer instructions with examples.	[4M]
3	a)	Write an Assemble language program to find number of even and odd numbers in an 8- Bit array.	[8M]
	b)	Draw the interrupt vector table of 8086 microprocessor and explain its operation in detail.	[8M]
4	a)	Interfacing of a two 4X4 PROM and two 8X4 RAM with 8086 CPU, draw the memory map and interfacing diagram for it, the RAM address follows the ROM address.	[8M]
	b)	Draw the Inter facing diagram of 8257 DMA with 8086 CPU and explain its operation.	[8M]
5	a)	Draw the internal architecture of 80386 processor and explain its operation in detail.	[8M]
	b)	Explain the terms segmentation and paging of 80386 processor.	[8M]
6	a)	Draw the architecture of 8051 Microcontroller and explain its futures in detail.	[8M]
	b)	Explain the interrupt structure of 8051 Microcontroller.	[8M]
7	a)	Explain the different Thumb programming model of ARM controller with examples.	[8M]
	b)	Draw and Explain different timers presented in PIC controller.	[8M]

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Code No: RT32041 **R13** SET - 3

III B. Tech II Semester Regular Examinations, April - 2016
MICRO PROCESSORS AND MICRO CONTROLLERS
(Common to ECE, EIE and E.Comp.E)

Time: 3 hours Maximum Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	Explain the different minimum mode pins of 8086 microprocessor.	[3M]
	b)	Explain the concept of nested interrupts of 8086 microprocessor.	[4M]
	c)	Differentiate between BSR and I/O modes of 8255 PPI.	[4M]
	d)	List out the different addressing modes of 80386 processor.	[3M]
	e)	Explain the differences between microprocessor and microcontroller.	[4M]
	f)	List out the salient futures of ARM controller.	[4M]

PART -B

2	a)	Define assembler and explain the different assembler directives used in 8086 microprocessor.	[4M]
	b)	Draw the 8086 microprocessor internal architecture and explain the operation of each block.	[8M]
	c)	Draw the flag register of 8086 microprocessor and explain the function of each flag.	[4M]
3	a)	Write an Assemble language program to print the given string "JNTU KAKINADA".	[8M]
	b)	Define interrupt and explain the interrupt service routines in 8086 microprocessor programming.	[8M]
4	a)	Draw the 8257 DMA architecture and explain its operation along with register organization of DMA.	[8M]
	b)	Draw the 8251 USART architecture and explain the operation of each block in it.	[8M]
5	a)	Draw and explain the virtual 8086 mode of 80386 processor in detail.	[8M]
	b)	Explain different data types used in 80386 processor.	[8M]
6	a)	Explain the timer and counter operations of 8051 Microcontroller.	[8M]
	b)	Write short notes on (i) PSW (ii) SCON (iii) PCON (iv) TMOD.	[8M]
7	a)	Draw the architecture of PIC 16C61 controller and explain the operation of each block in it.	[8M]
	b)	Draw the flag register of PIC 16C71 controller and explain the function of each flag in detail.	[8M]

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Code No: RT32041 **R13** SET - 4

III B. Tech II Semester Regular Examinations, April - 2016
MICRO PROCESSORS AND MICRO CONTROLLERS
(Common to ECE, EIE and E.Comp.E)

Time: 3 hours Maximum Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	Explain the different maximum mode pins of 8086 microprocessor.	[3M]
	b)	Explain the concept of stack structure of 8086 microprocessor.	[4M]
	c)	Draw the ICW's of 8259 Programmable interrupt controller.	[4M]
	d)	Define paging and explain its importance in 80386 processor.	[3M]
	e)	Draw the PSW register of 8051 microcontroller and explain function of each pin.	[4M]
	f)	List out the interrupts of PIC 16C61 controller.	[4M]

PART -B

2	a)	Draw the minimum mode pin diagram of 8086 microprocessor and explain each pin in detail.	[8M]
	b)	Define addressing mode and explain different addressing modes presented in 8086 microprocessor.	[8M]
3	a)	Write an Assemble language program to find the sum of squares of first ten numbers.	[8M]
	b)	Draw the interrupt cycle of 8086 microprocessor and explain its operation in detail.	[8M]
4	a)	Draw the Interfacing diagram of D/A Converter with 8086 Microprocessor along with 8255 PPI and explain its operation.	[8M]
	b)	Draw the 8255 PPI architecture and explain its operation of each block along with modes of it.	[8M]
5	a)	Explain the different addressing modes of 80386 processor with examples.	[8M]
	b)	Explain the concept of protected mode of 80386 processor in detail.	[8M]
6	a)	Draw the 8051 Microcontroller architecture and explain its operation in detail.	[8M]
	b)	Explain the following registers (i) IP (ii)IE (iii) PCON (iv)TMOD.	[8M]
7	a)	Draw the architecture of ARM controller and explain the operation of each block in it.	[8M]
	b)	Explain the Power on reset and watch dog timers operation in PIC controller in detail.	[8M]

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