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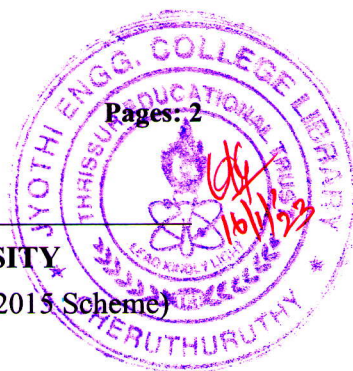
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Reg No.: _____

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree (S, FE) Examination January 2023 (2015 Scheme)



Course Code: MR303

Course Name: MICROPROCESSORS AND MICROCONTROLLERS

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks.

		Marks
1	Write a short note on the concept of DMA.	5
2	Differentiate between Jump and Call instructions.	5
3	Explain briefly about the control word of 8255.	5
4	Give a brief description about the pin diagram of 8051 microcontroller.	5
5	Write down the various logic instructions used in 8051 and give an example for each instruction.	5
6	Discuss briefly about the timer sections of 8051.	5
7	Explain how we can interface of digital to analog converter with 8051.	5
8	How can we interface serial ADC with 8051 microcontroller?	5

PART B

Answer any three questions, each carries 10 marks.

9	With neat timing diagram and block diagram explain minimum mode configuration of 8086.	10
10	a) Briefly explain with example about iteration control instructions of 8086.	5
	b) Write a short note on rotate instructions of 8086 microcontroller.	5
11	a) Show how to interface single 8259 with 8051 microcontroller.	6
	b) Explain about the various registers of DMA controller.	4
12	Elucidate in detail about the architecture of 8051 microcontroller.	10
13	With timing diagrams explain about timer modes of 8253.	10

PART C

Answer any two questions, each carries 15 marks.

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| 14 | a) | Write a short note on arithmetic instructions of 8051 | 5 |
| | b) | Give a detailed description about 8051 addressing modes with example. | 10 |
| 15 | a) | Write an assembly language program for 8051 to perform 8 bit multiplication and division. | 8 |
| | b) | Write an 8051 program to perform | 7 |
| | | 1. 16 bit addition | |
| | | 2. 8 bit subtraction | |
| 16 | a) | Write the algorithm and program for 8051 to generate sinewave using DAC. | 8 |
| | b) | Design the interfacing of parallel ADC with 8051. | 7 |
| 17 | | Design an 8051 based system interfaced with external ROM and RAM. Also show the address mapping. | 15 |
