

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree (S, FE) Examination June 2024 (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.*

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| 1 | Write a short note on pin description of 8086. | 5 |
| 2 | Explain briefly about string instruction of 8086. | 5 |
| 3 | Illustrate about 8237 DMA controller. | 5 |
| 4 | Discuss about PSW register. | 5 |
| 5 | With example explain about loop instructions. | 5 |
| 6 | Write a 8051 program to find out how many equal bytes between two memory blocks 30h to 40h and 50h to 60h | 5 |
| 7 | Write a short note on parallel ADC interfacing. | 5 |
| 8 | Discuss briefly about DAC interfacing. | 5 |

PART B*Answer any three questions, each carries 10 marks.*

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| 9 | Sketch and explain in detail about the architecture of 8086. | 10 |
| 10 | With example explain about transfer control instructions. | 10 |
| 11 | Sketch and explain the architecture of 8259. | 10 |
| 12 | Illustrate in detail about the architecture of 8051. | 10 |
| 13 | Explain in detail about 8251. | 10 |

PART C*Answer any two questions, each carries 15 marks.*

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| 14 | a) Discuss in detail about arithmetic instructions of 8051. | 8 |
| | b) The crystal frequency is given as 12 MHz. Make a subroutine for 8051 that will generate delay of exact 1 ms. Use this delay to generate square wave of 50 Hz on pin P2.0. | 7 |

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| 15 | a) | With example explain about the addressing modes of 8051. | 8 |
| | b) | Discuss briefly about Jump instructions in 8051. | 7 |
| 16 | | Illustrate in detail about external memory interfacing with 8051. | 15 |
| 17 | | Write a program to interface DC motor with 8051. | 15 |