**20EE501**

**Hall Ticket Number:**

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| **III/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **December, 2023** | **Electrical and Electronics Engineering** | | |
| **Fifth Semester** | **Micro Processor and Microcontroller** | | |
| **Time:** Three Hours | | **Maximum:** 70 Marks | |
| ***Answer question 1 compulsory.*** | | | **(14X1 = 14Marks)** |
| ***Answer one question from each unit.*** | | | **(4X14=56 Marks)** |
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|  |  |  | CO | BL | M |
| 1 | a) | Draw the 8086 flag register. | CO1 | L2 | 1M |
|  | b) | Differentiate operand and operator? | CO1 | L2 | 1M |
|  | c) | Define Procedure | CO1 | L1 | 1M |
|  | d) | What is BIU? | CO1 | L1 | 1M |
|  | e) | Explain the control word to configure 8255 in I/O mode. | CO1 | L2 | 1M |
|  | f) | What is interrupt vector table? | CO2 | L1 | 1M |
|  | g) | Define DMA? | CO2 | L1 | 1M |
|  | h) | Differentiate microprocessor and microcontroller? | CO3 | L2 | 1M |
|  | i) | Define addressing mode? | CO3 | L1 | 1M |
|  | j) | Define Port? | CO3 | L1 | 1M |
|  | k) | Define Timer? | CO4 | L1 | 1M |
|  | l) | Write the interrupt priority order in 8051? | CO4 | L1 | 1M |
|  | m) | What is TMOD register? | CO4 | L1 | 1M |
|  | n) | What is the difference between ADC and DAC | CO4 | L1 | 1M |
| **Unit-I** | | | | | |
| 2 | a) | Explain BIU and EU with block diagrams | CO1 | L2 | 7M |
|  | b) | Develop 8086 assembly language program to write numbers in ascending order? | CO1 | L3 | 7M |
| **(OR)** | | | | | |
| 3 | a) | List & Explain arithmetic Instructions of 8086 microprocessor. | CO1 | L2 | 7M |
|  | b) | Define procedure? Explain different types of procedures. | CO1 | L1,L2 | 7M |
| **Unit-II** | | | | | |
| 4 | a) | Explain why 8255 ports are divided into two graoups discuss how these groups are controlled in different modes of operation. | CO2 | L2 | 7M |
|  | b) | Draw and explain 4 x 4 matrix key board interfacing with 8086 microprocessor. | CO2 | L2 | 7M |
| **(OR)** | | | | | |
| 5 | a) | Draw and explain the block diagram programmable interval timer (8254) | CO2 | L2 | 7M |
|  | b) | What is the need for DMA? Draw and explain architecture of 8237DMA controller. | CO2 | L1 | 7M |
| **Unit-III** | | | | | |
| 6 | a) | With a neat block diagram explain in detail each block of 8051 µc architecture. | CO3 | L1 | 7M |
|  | b) | Explain memory organization of 8051 | CO3 | L2 | 7M |
| **(OR)** | | | | | |
| 7 | a) | Develop an ALP to perform multiplication of two numbers using 8051. | CO3 | L2 | 7M |
|  | b) | Develop an ALP to perform addition of two numbers using 8051. | CO3 | L2 | 7M |
| **Unit-IV** | | | | | |
| 8 | a) | Compare serial versues parallel communicaiton. Describe serial data communicaiton of 8051. | CO4 | L1 | 7M |
|  | b) | Explain 8051 timers. | CO4 | L2 | 7M |
| **(OR)** | | | | | |
| 9 | a) | Explain interrupts of 8051. | CO4 | L2 | 7M |
|  | b) | Explain stepper motor interfacing. | CO4 | L2 | 7M |

