**20EE501**

**Hall Ticket Number:**

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| **III/IV B.Tech (Supplementary) DEGREE EXAMINATION** | | | |
| **July/August,2023** | **Electrical and Electronics Engineering** | | |
| **Fifth Semester** | **Microprocessor & Microcontrollers** | | |
| **Time:** Three Hours | | **Maximum: 7**0 Marks | |
| *Answer Question No. 1 Compulsorily.* | | | (14X1 = 14 Marks) |
| *Answer* ***ANY ONE*** *question from each Unit.* | | | (4X14=56 Marks) |

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| 1. | a) | Mention the improvements in the architecture of 8086 over 8085 architecture | CO1 | L2 | 1M |
|  | b) | What is pipelining out of the following µP and µC which one is having this implementation 8085,8086 and 8051. | CO1 | L1 | 1M |
|  | c) | What is the minimum and maximum size of the segment in 8086. | CO1 | L1 | 1M |
|  | d) | How many address lines are required for accessing 64 KB memory? | CO2 | L2 | 1M |
|  | e) | Why the offset register IP is present | CO2 | L3 | 1M |
|  | f) | What is the BSR control word for PPI 8255 to clear PC6? | CO2 | L2 | 1M |
|  | g) | Mention the I/O port of 8051 that does not have any alternate function. | CO3 | L2 | 1M |
|  | h) | Explain about PUSH and POP instructions in 8051. | CO3 | L2 | 1M |
|  | i) | State the function of RS1 and RS0 bits in the flag register of 8051. | CO3 | L1 | 1M |
|  | j) | Explain how to disable all the interrupts in 8051 Microcontroller. | CO3 | L2 | 1M |
|  | k) | Number of register banks available in 8051 microcontroller? | CO4 | L3 | 1M |
|  | l) | What is the value of PC register after RESET state of 8051? | CO4 | L2 | 1M |
|  | m) | Is there any provision to alter the priorities of the interrupts in 8051,If possible mention its SFR | CO4 | L2 | 1M |
|  | n) | What is size of SP, PC registers in 8051 µC | CO4 | L3 | 1M |
| **Unit -I** | | | | | |
| 2. | a) | Explain the Internal Architecture Of 8086 Microprocessors With Neat Sketch. | CO1 | L1 | 7M |
|  | b) | Explain the Memory Segmentation and what are the advantages and its disadvantages | CO1 | L3 | 7M |
|  |  | **(OR)** |  |  |  |
| 3. | a) | List & Explain string Instructions of 8086 microprocessor. | CO1 | L2 | 7M |
|  | b) | Describe the different addressing modes of 8086 microprocessor. | CO1 | L1 | 7M |
|  |  | **Unit -II** |  |  |  |
| 4. | a) | Explain the working modes of 8255 PPI. | CO2 | L3 | 7M |
|  | b) | Explain the Direct Memory Access concept and list the features of 8257DMA Controller | CO2 | L4 | 7M |
|  |  | **(OR)** |  |  |  |
| 5. | a) | Explain the architecture of 8259 Programmable Interrupt Controllers. | CO2 | L1 | 7M |
|  | b) | Explain different modes of serial I/o and data communication. | CO2 | L3 | 7M |
|  |  | **Unit -III** | |  |  |
| 6. | a) | Discuss about the internal data and program memory organization in 8051 µC | CO3 | L4 | 7M |
|  | b) | Develop an ALP to multiply the two 8 byte number stored in the internal data memory of 8051 µC | CO3 | L2 | 7M |
|  |  | **(OR)** |  |  |  |
| 7. | a) | Write an ALP to find out number of 1s in a byte available in internal data memory location 30H. Store the result in accumulator itself? | CO3 | L1 | 7M |
|  | b) | Compare microcontroller and microprocessor | CO3 | L2 | 7M |
|  |  | **Unit -IV** |  |  |  |
| 8. | a) | Explain the 8051 timer logic and different modes of operation with neat sketches. | CO4 | L1 | 7M |
|  | b) | Explain the ADC interfacing to 8051 microcontroller. | CO4 | L3 | 7M |
|  |  | **(OR)** |  |  |  |
| 9. | a) | Explain Serial Port Programming in 8051. | CO4 | L2 | 7M |
|  | b) | Write an 8051 assembly language program to send an 8-bit data, 1 start bit and 1 stop bit serially at 4800 baud rate. Take XTAL = 11.0592 Mhz. | CO4 | L3 | 7M |

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